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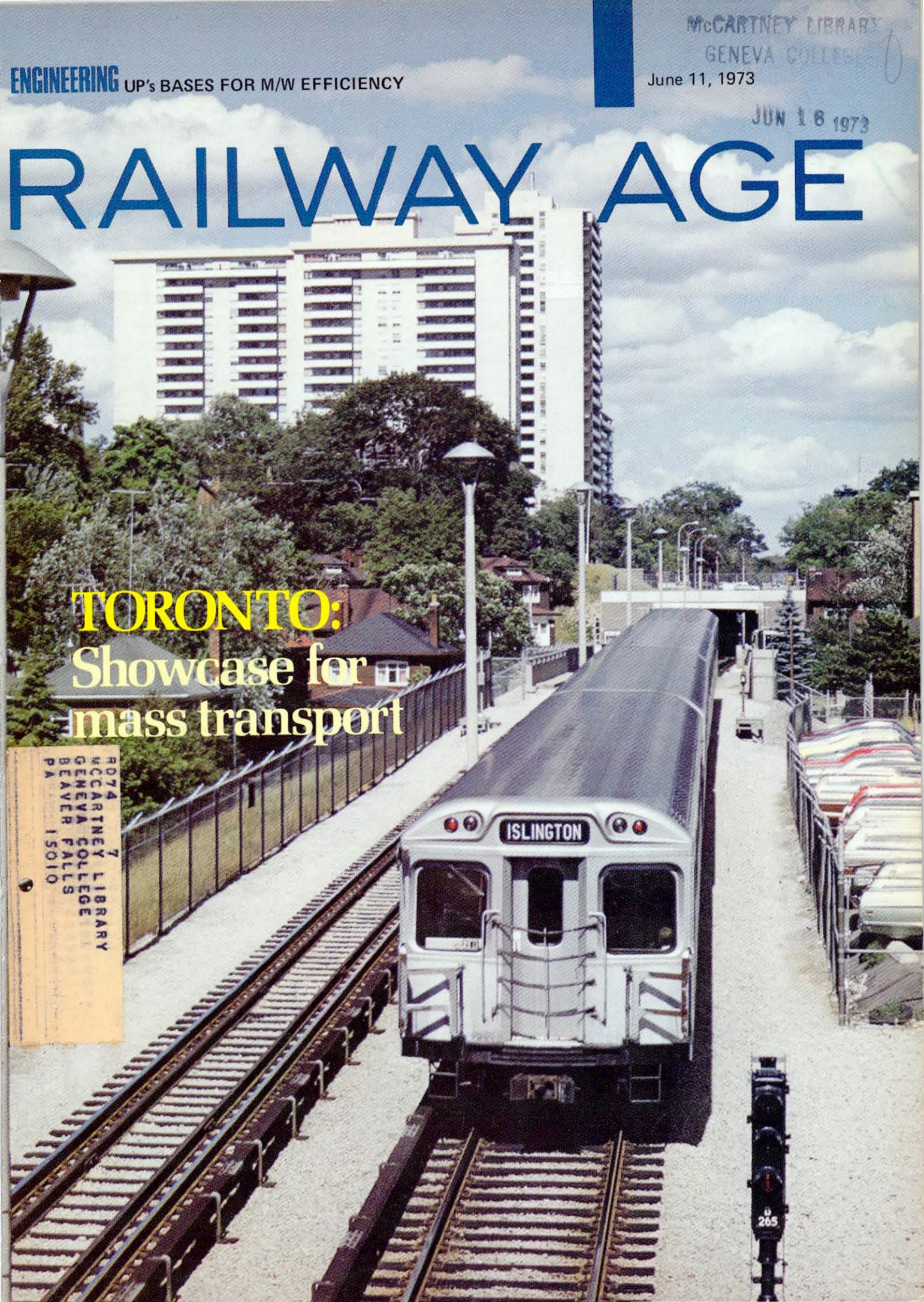

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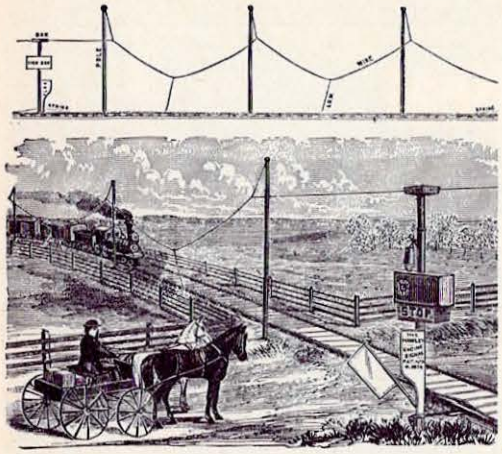

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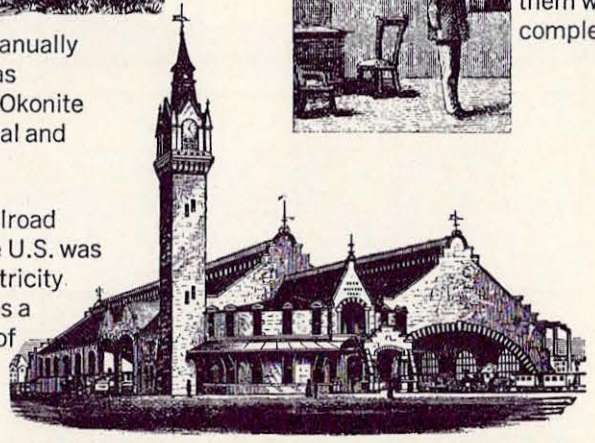

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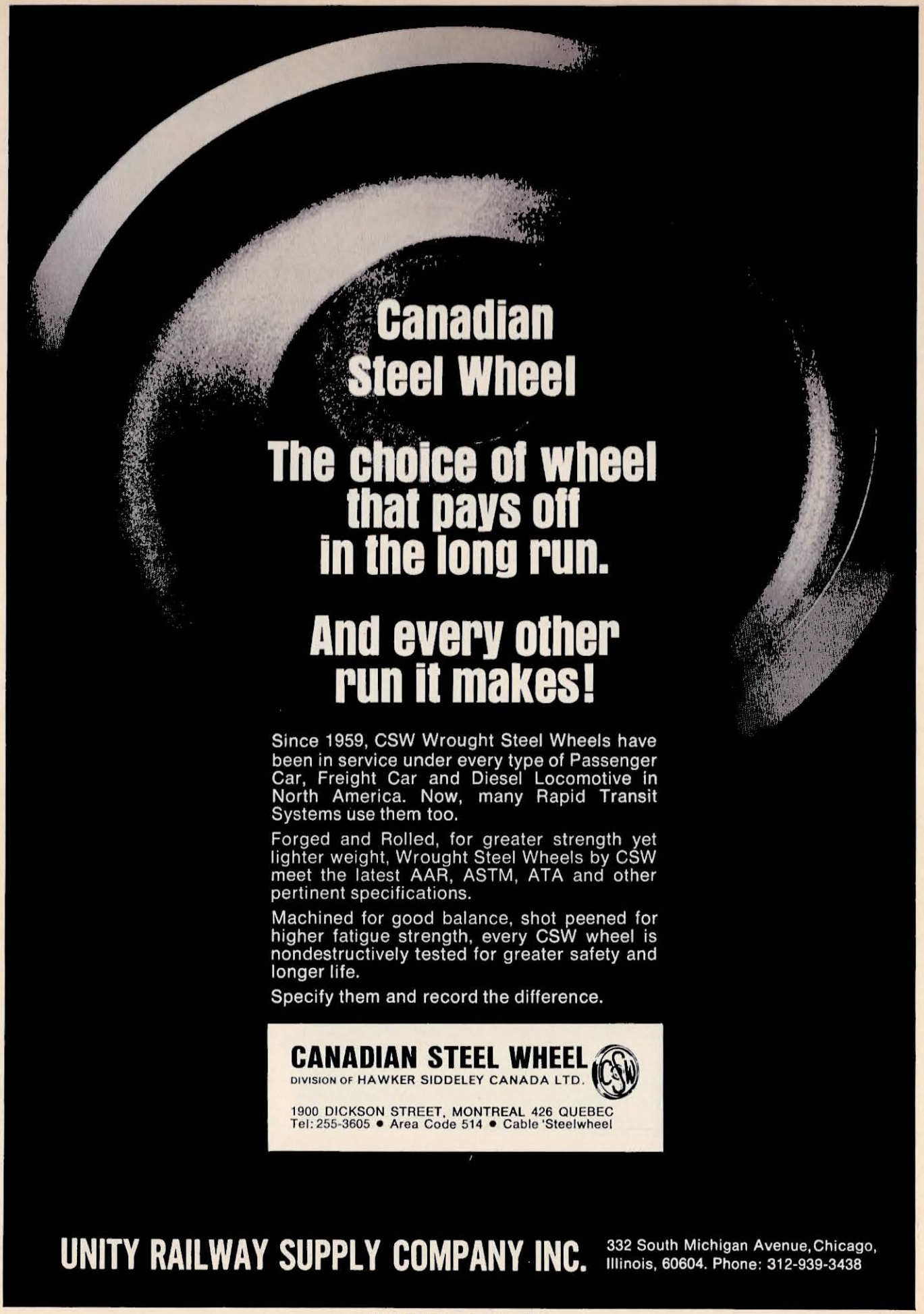
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Inside

LUTHER MILLER

THE TORONTO STORY

"While others plan and talk, Toronto plans and digs; while others plan and consult, Toronto plans and lets contracts; while others plan and haggle, Toronto plans and grows."

With these words, Associate Editor Robert D. Bartley succinctly sums up the "action now" approach which has given Ontario's capital city one of the world's showcase public transportation systems (p. 30).

This month North America's top transit planners and operators will gather in Toronto for the annual conference of the Institute for Rapid Transit. Many of the planners will come from cities which have for years been bogged down in the talking/consulting stage. Perhaps some of the Toronto magic will rub off on them.

DON'T LET THE PLANT DETERIORATE

Engineering Editor Merwin Dick is not addicted to overstatement. So, when Merwin says a story is "must" reading, it must be "must" reading. He and Associate Editor Bob Dove recently spent the equivalent of six editor-days on Union Pacific, looking at operations and talking with Chief Engineer R.M. Brown and Key members of his staff. One result is the article beginning on page 38—the product of a searching interview with Bob Brown in which Brown talks of the challenges and the pressures facing engineering and m/w people today and the ways in which UP is responding to them.

UP's approach to coping with increasing traffic loads while keeping costs down is pragmatic—and provocative. For instance, UP believes in embracing the latest in technological advances—and then going even further to create some of its own. But, UP does *not* believe in accepting a practice just because it's in wide use—not without making its own evaluation.

FRA TRUCKING FOR A NEW BOGIE

The rest of the world may look to the U.S. for diesel-electric locomotive technology, but when the DOT/Amtrak Metroliners proved to have a ride that can at best be described as "adequate," it was time to look to where the passenger car action is. That meant Europe and Japan; Mechanical Editor Fred Houser describes on page 20 how the Federal Railroad Administration has finally awarded a contract to a U.S. aerospace firm for trucks which have been developed in Switzerland (bogies, they call them over there).

The annual Railway Age Rail/Transit Tour to Europe this year showed a group of U.S. rail experts just what sort of action there is in five nations of western Europe. Bob Lewis reports on page 24 on his tour which followed its rail and transit property inspections with attendance at the International Union of Public Transport (UITP) congress in the Netherlands.

Petroleum and You (A History of the Former)

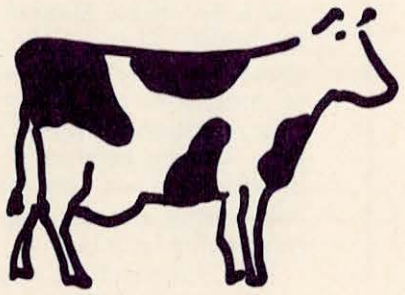
Chapter Two: The Early Years

Civilizations began to flourish, and petroleum, at first little more than a bit player venturing timidly out from the wings, began to develop into the accomplished performer which would one day, amid well-deserved plaudits, take its rightful place at center stage nightly plus matinees on Wednesdays and Saturdays. For example, asphalt, a petroleum residue, was used around 600 B.C. by King Nebuchadnezzar in constructing the Hanging Gardens of Babylon, considered one of the seven wonders of the world until he fell behind in his watering.

In like manner, the Assyrians used asphalt in the building of their cities and received many nice compliments. One of the most treasured of these was the remark of Darius the First, King of Persia, which has been translated from ancient scrolls of the period as, "I really like your use of asphalt in the building of this city." He reportedly said this of Nineveh just before demolishing it.

City of Nineveh after visit by Darius the First.

Meanwhile the ancient Chinese while drilling for salt inadvertently struck oil. Early documents indicate it tasted terrible on eggs but was found to work well as a fuel. Although this appeared at the outset to be a significant advance, it led them to the erroneous conclusion that anything which tasted terrible on eggs would make a good fuel. Several years were wasted pursuing this false line of reasoning—time that might have been better spent in coming up with the eraser, the black and white cow, and other important inventions.



The black and white cow, unknown in China to this day.

As for the western hemisphere, there is evidence that the American Indians were acquainted with petroleum hundreds of years before the arrival of the white man. They were, in fact, among the first to recognize the medicinal value of petroleum, and were it not for their research and dedication the petroleum bandage would today be only a half-realized dream.

The petroleum bandage as it might have been—a half-realized dream, and also coming unstuck at one end.

This is the second chapter in a seven-part series presented as a salute to the industry. In addition we would like you to know that we offer a full line of lube oils, greases, cutting oils, fuels, motor oils, white oils, LP-Gas, and specialty products, with a complete network of service facilities.

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RAILWAY AGE

JUNE 11, 1973

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A Toronto Transit Commission staff photographer took this picture of an eastbound train on the Bloor-Danforth line.

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Short and Significant

MAY CAR ORDERS: 2ND HIGHEST IN 18 YEARS

The 13,994 new freight cars ordered in April 1973 represented the second highest month for order totals since December 1955 when 34,774 cars went on the order books. In April 1969 orders were placed for 19,606 cars. The steady upturn in car buying saw a jump in the undelivered backlog of new freight cars from 26,535 on April 1, 1973, to 36,527, on May 1, 1973. On May 1, 1972, the backlog was 16,847. Of the 13,994 new cars ordered in April, commercial builders got all but 100. For the first four months of 1973 the total ordered was 34,714 with carbuilders getting 33,072. In 12 months of 1972 carbuilders got orders for only 42,343 cars. New car deliveries in April were 4,001, down from 5,157 in March 1973 and from 4,417 in April 1972.

TTX SPENDING TO SET RECORD

"Dollar-wise," says Trailer Train, "this will be our biggest equipment-acquisition year ever. And, before the year is out, it could also become our biggest year in terms of numbers of cars ordered." TTX received board approval last month for the expenditure of $50 million for 2,249 new flat cars (see p. 49). With these cars added to the cars ordered earlier, the total for 1973 is beginning to close in on TTX's record years of 1965 and 1966, when 7,853 cars and 7,954 cars respectively, were ordered. With six months still remaining, 1973 could easily become a record equipment as well as expenditure year. The TTX fleet of cars in service and on order now numbers over 68,000.

GETTING DOWN TO THE CORE

An idea of the Northeastern "core" system, as the government would designate it, was revealed at the end of May when Federal Railroad Administrator John W. Ingram explained to senators how retention of only 260 miles of the 900-mile Lehigh Valley would still make possible handling of 98% of the traffic which LV moves today. LV trustees are seeking permission to cease operations Oct. 1. There are now indications that the Federal government might support this action. Retained segments of LV would be operated by other lines if restructuring of Northeast gets the go-ahead. Meanwhile, the Reading reported that a study by LV, Reading, Jersey Central and Lehigh & Hudson River, all bankrupt, indicated their consolidation "might be able to operate on a break-even basis" with an infusion of $50 million to $70 million, including five years' working capital.

SOUTHERN HIKES CAPITAL-OUTLAY PLANS

Southern's record $150-million capital spending budget announced earlier this year has been increased by $10 million. The $160 million represents an increase of $47.6 million over Southern's capital expenditures in 1972 and is nearly $20 million, or 13.9%, higher than in 1971, the previous record year. W. Graham Claytor, Jr., Southern president, noted that the new figure brings to about two-thirds of a billion dollars the total of the railroad's expenditures for new or improved plant and equipment in the five years 1969-1973.

PC DEFERS CUT IN CREW SIZE

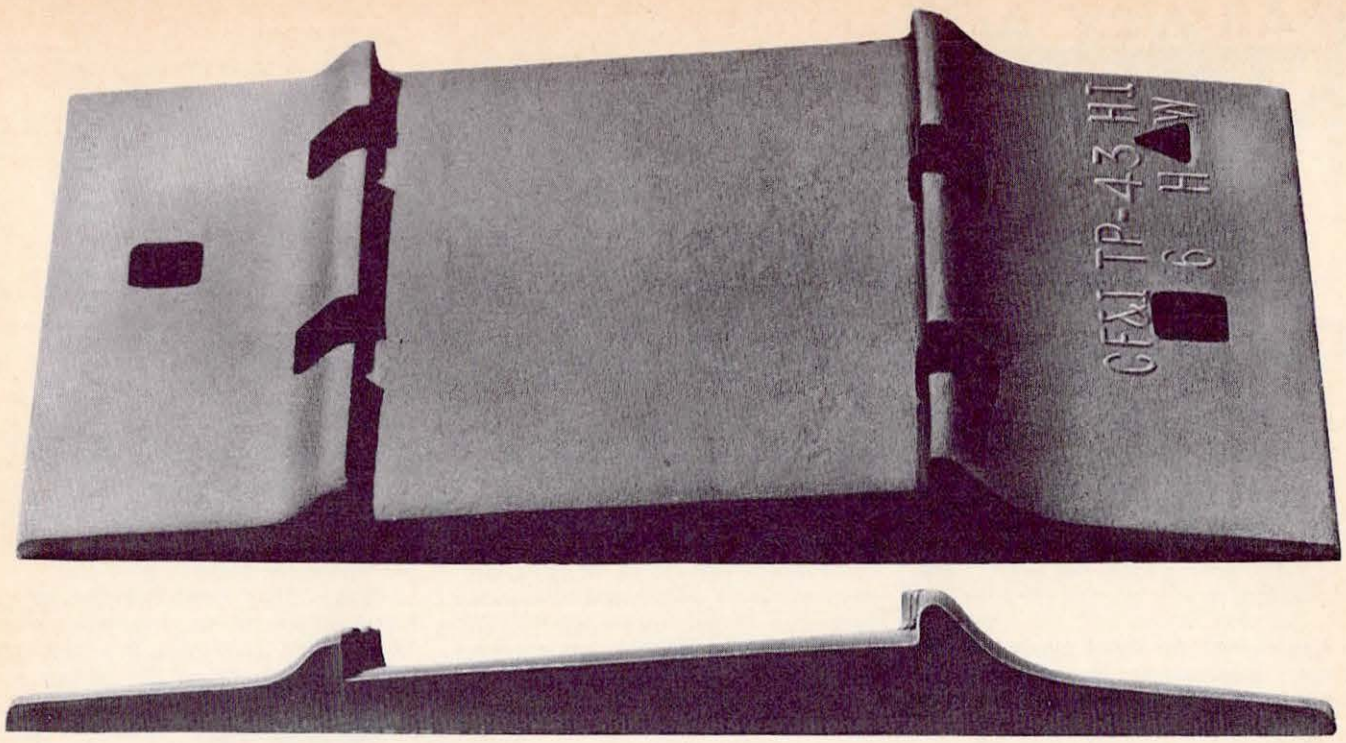
Penn Central's trustees have decided to defer promulgation of rules which would have reduced train crews from a conductor and two brakemen to a conductor and one brakeman. The rules had been scheduled to go into effect June 9; the deferral is "until further notice," a trustees' statement said. "We had always anticipated," the statement added, "that promulgation of the rules would result in a strike by our employees. This in turn requires that the railroad be in a financial position to stand the effects of such a work stoppage. Penn Central can no longer do so. . .A work stoppage of any duration at this juncture would in all likelihood so deplete cash that service restoration would be impossible."

SECOND BLAST RIPS AMMO TRAIN

While investigations of the April 28 explosion at Southern Pacific's Roseville, Calif., Yard were still under way (RA, May, 14, p. 8; May 28, p. 76), a second explosion hit an SP train which had as part of its consist bomb-laden cars. This time, the blast came as the train was moving in Arizona east of Tucson. At this point, nobody is speculating as to the precise cause of either explosion. But, nothing has yet been turned up which indicates any cause related to train movement or train-handling. Under the circumstances, the possibility of sabotage is very much under investigation.

REB PLANS VIDEO-TAPE PROGRAM

The Railway Educational Bureau of Omaha, Neb., and the Minneapolis, Minn., firm of VCI have formed a joint venture for the production and marketing of video-tape training films for the railroad industry. REB Director Reid Kenedy said the first video-tape training aid, on TOFC locked hitch inspection, will be released soon. Inquiries should be directed to the REB at 1809 Capital Ave., Omaha 68102.



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RAILWAY AGE
NEWS

Car pools: Are railroads ready to dive in?

Put together a panel of experts: Two major shippers, two top marketing/traffic officers of railroads. Set them down in front of a roomful of other experts. Give them an important subject—a controversial one: Freight-car supply, and the setting up of a national car pool.

And what do you get? Just what you might expect: An idea a minute. Agreement. Disagreement. Maybe you don't find *a* solution, maybe you don't even get a consensus. But you do get to sample a lot of different thinking, from a lot of different viewpoints.

The Railway Systems and Management Association seminar on "A National Freight Car Pool" was just such a happening. As its principals, it had E.G. Kreyling, Jr., vice president-marketing of Southern; W.K. Smith, vice president-transportation of General Mills; E.D. Grinnell, Jr., vice president-traffic of Frisco; and Allan H. Surplus, vice president-transportation of Bay State Milling. Their discussion was revealing—for what they said, and for the fact that they showed what some might view as a surprising degree of agreement on key points in any pool proposal.

Surplus, in a way, was in the disadvantage slot, because he led off—but undaunted, he came out for some type of pool arrangement which might have Federal aid in the form of insurance but which would have private ownership and operation. Frisco's Ernie Grinnell came next—with an OK for the general idea *if* it had certain conditions attached, namely that there be ownership and operation by individual roads, that the pool not be limited to general-service box cars but also include such as covered hopper cars, and that there be a "realistic" number of cars involved. General Mills' outspoken Bill Smith was the third man—and he agreed on the essentials with Surplus and Grinnell. Which left it to Ed Kreyling—who agreed, in large part, with Surplus, Grinnell and Smith, but added his own touch to the pool proposals: Cars should be free-running, home for any road that is destination-for-unloading under normal circumstances—but there should be a gimmick to encourage continued pool-type car acquisitions by individual roads. Kreyling's idea: In time of car-need, participating roads with 90% or less of pool-type car ownership on line would be able to demand empty-car return from roads with a higher percentage. His point: Roads which can afford major car programs would be encouraged to continue them—thus keeping ownership high and putting these roads in position to get car-supply help when it's needed; at the same time, roads less well-off financially would be encouraged to do the best they can on car-acquisition—because a drop in ownership would put them in the position of having to surrender cars in short-supply situations.

● **Individual approaches.** While the shipper/railroad views weren't all that different, however, there were key points individually made. Allan Surplus, for instance, took a dim view of the long-run effects of circumstances in which better-off roads buy cars to take care of their own needs while less-well-off roads struggle along. All this can do, he figures, is create a loop-back situation—since the railroads are a system and a serious failure at one point is sooner or later going to create failure elsewhere. As for the various efforts that have been made to relieve car shortages, the "continued existence of the problem casts doubt upon past approaches."

> One shipper said that "a lot of railroads haven't spent a dime for freight-car management."

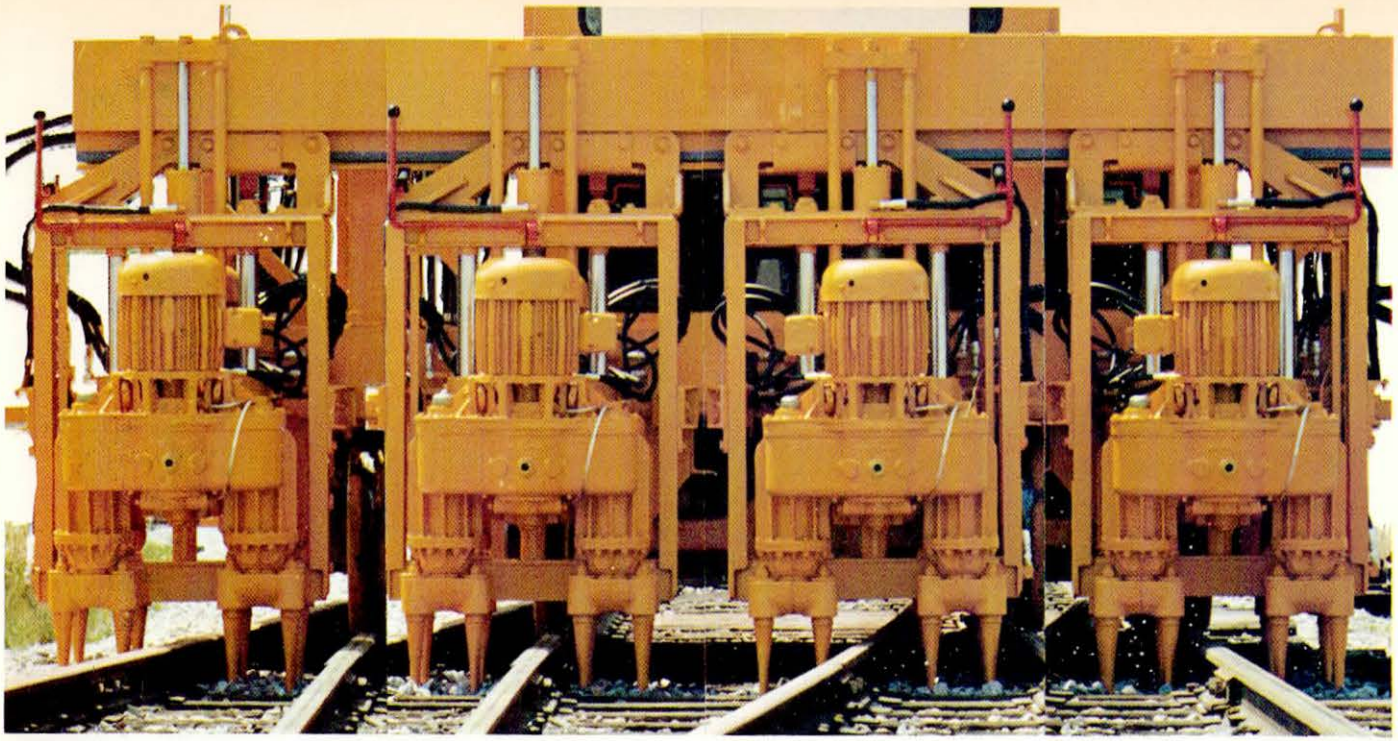
Grinnell came down hard on the need for industry ownership and operation of a car pool—and contrasted this with the proposal made in S.1149 (modified Fascor) in which railroads, rail labor, shippers, consumers and government would be represented on a governing board. Said Frisco's traffic vice president: Railroads alone have had enough trouble trying to get agreement among eastern, western and southern carriers—and the framers of S.1149 could have hardly done a better job if what they set out to do was to guarantee automatic disagreement on any subject among the board of governors.

General Mills' Smith talked, as he has before, of woeful car-utilization figures. The industry investment, he noted, is in the neighborhood of $8 billion—and "what other industry shows such poor utilization of such a resource?" Smith had praise for some roads—Southern Pacific got a prime mention—for development of freight-car-management programming. But, he added, "a lot of railroads haven't spent a dime for freight-car management." His conclusion: Time is running out—not only so far as the problem itself is concerned, but also so far as consideration of alternatives is involved.

For his part, Kreyling pointed out a fact that has been little-publicized but oft-worried-about—that there often isn't really a shortage of cars per se but rather a shortage of cars that can be reloaded where they are made empty. ICC and AAR rules are to blame—and the net result is that empties which might be loaded are being sent home empty while other empties are being shipped in from somewhere else to handle the loads that the first group of cars could well have handled.

● **Goals—and problems.** Stage-setter for this get-together which turned out to be more love-in than donnybrook was A. Scheffer Lang, assistant to the president-special studies of AAR—who put the various elements of car-pooling into a framework and then let shippers and railroad officers go to work.

Lang listed, for example, four main goals of a national car pool—improved car utilization, introduction of an increased number of cars (of certain types, at least) into the fleet, development of some way to make up for imbalances in car-financing capabilities, and provision for experiments with new car-management procedures. He cited various possible types of pool ownership, including ownership by individual railroads, leasing companies, a railroad-owned corporation or a government-owned corporation—and got a couple of



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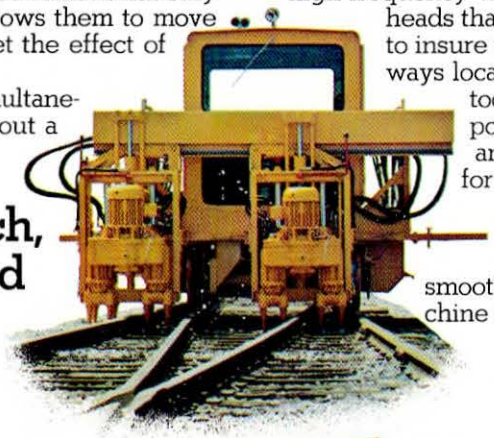

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Lines on Labor

GUS WELTY

SO, WHAT IS A "LEADER"?

It's possible that no single problem—in rail management, in rail labor (and, from the evidence the press and the tube have been providing, in government)—is more pressing than the problem of developing leaders. And so, it was an interesting coincidence that these eyes happened to fall upon an exposition of what leadership should be all about. What follows is, to be sure, one man's opinion. But it covers a lot of ground.

THE LEADER: RESPONSIBLE, FAIR, REALISTIC

"First, an officer holds his position as a trustee and not as a proprietor. He can properly retain it only so long as he is the best-qualified man for the post. Too often, an officer is tempted to consider his position as a reward for past service and to regard it as a permanent possession like a gold trophy. Officers may recognize the fact that if they want to make further advancement they must put forth additional work for it—but are they always fully aware that they should also work equally hard to hold the job they already have? The conception of proprietorship must be broken down and that of trusteeship substituted—not solely for ethical reasons and to assure services of the business, but to strengthen the position of management in public esteem. The surest way of maintaining a strong position for management is for those who hold such posts to demonstrate at all times that they deserve them.

"Second, if a job is well done or a department or an entire organization runs well, the credit should be given to the entire group. If the job is done badly or the department or organization functions inefficiently, the man at the top should bear the brunt of the responsibility because he alone is the one who is in a position to correct it. Too often, if the job runs well, the man at the top takes credit for it—but if it functions unsatisfactorily, he finds it convenient to place the blame on the organization.

"Third, the title of an official position should not be regarded by the incumbent as the measure of the prestige, honor and respect due him by the organization below him in rank. Instead, he should look upon it as a measure of the capacity and responsibility with which his superiors and associates have entrusted him. Titles tend to become confused with honors in the mind of many of the holders of them. This is wrong. Titles should be wholly related to work, duties and responsibilities. Titles of officers of corporations should never be corrupted by subconsciously thinking of them as titles of nobility, held without regard to performance."

BY THESE MEASURES, THE RECORD'S NOT BAD

If these measures are valid, the industry (management and labor) has been mostly blessed. And while it could be argued that trustee = caretaker and proprietor = entrepreneur and that this had indeed been a major problem—lack of entrepreneurial motivation—the rest of the creed holds up. Where did it come from? Not from any recent development. It was first put to paper exactly 25 years ago, by a man who even then knew what it was to try to lead in trying times. The author: then-president of the Monon, John W. Barriger.

additions from seminar participants: shipper ownership and ownership by an independent company which might have broad-based equities.

No single possibility among these various ownership proposals emerged as an undisputed winner. Clearly, holding title to such a fleet is fraught with many and complicated problems.

Lang also touched on possible approaches to use of pooled cars—with free-running cars under certain flow rules, with a Trailer Train approach, with car-by-car direction and with a kind of "rental exchange" system in which in time of need cars would go to the users who needed them badly enough to pay more for their use.

He talked of management responsibilities—which could be lodged with the AAR Car Service Division, with TTX or something like it, with individual railroads, with a new corporation. And he talked of the problems in managing a pool:

—Provision for adequate incentives for investment.

—Determination of who pays for surplus car-days.

—Determination of how empty-car moves will be handled from an expense standpoint.

—Determination of how cars will be rationed or allocated in the inevitable times of shortages.

As Schef Lang put it, any proposal which does not confront that last problem is not a fully-worked-out proposal and may well be one that is doomed to failure. Very few proposals today, he noted, "deal with this problem in any explicit way. In a sense, it is the important problem which we have with our present national freight-car pool. Improved procedures for scarcity-rationing of cars thus seems an inescapable requirement if a pool is to be genuinely successful."

On the other hand, he concluded, if a pool proposal promises to deal effectively with that allocation problem and the others cited, then the specifics of how it should be put together—regarding ownership and financing, rules for use, kind of management—might become fairly easy to work out.

What followed was a combination of viewpoints—from railroad people, suppliers, shippers, financial people, consultants. Nothing got solved, probably—but there was a lot of air cleared. And there was this sobering reminder from Schef Lang: While rolling stock today represents just about one-third of railroad capital assets on a basis of reproduction cost less depreciation, it represents about two-thirds of the capital rents being paid out. A decade or so ago, the payout break between rolling stock and fixed plant was something like 50-50. Ten years from now? It may be 80-20, because the gap is widening steadily.

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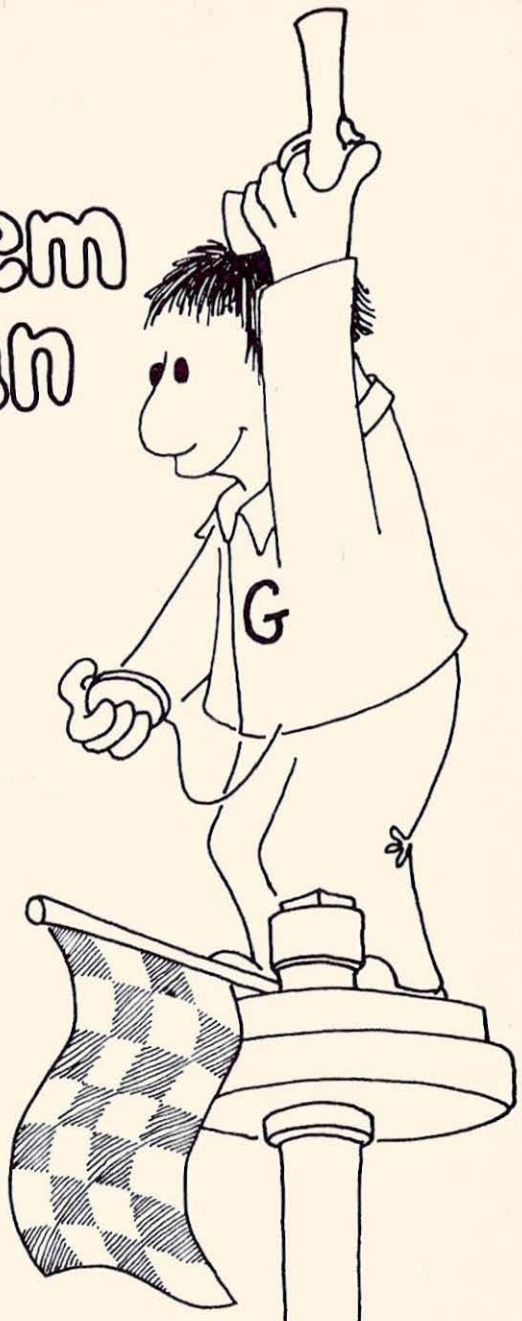

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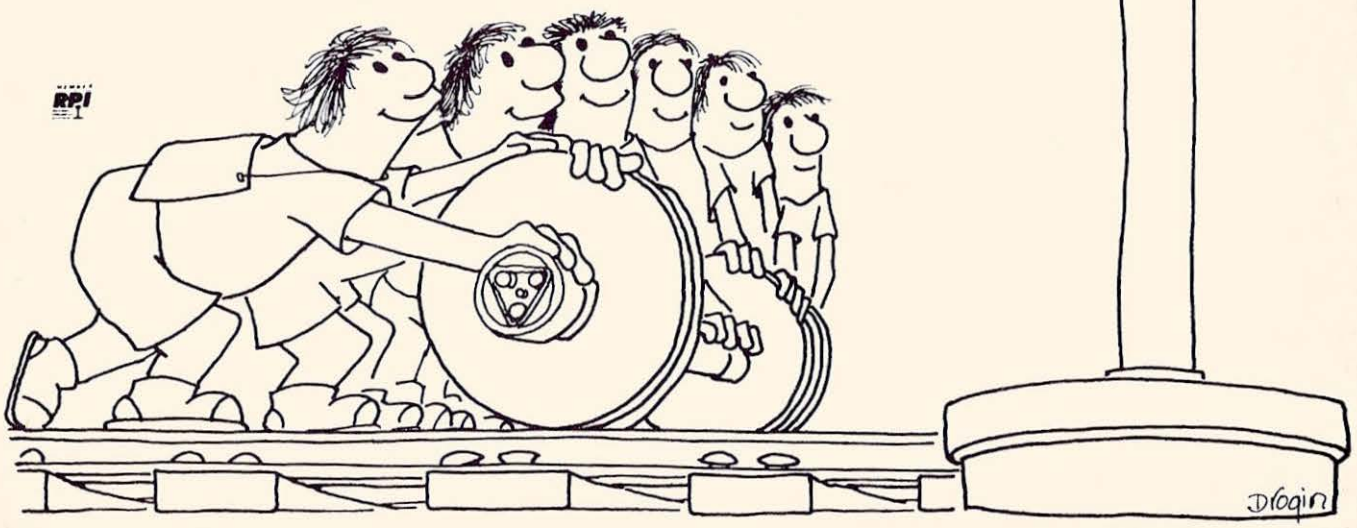

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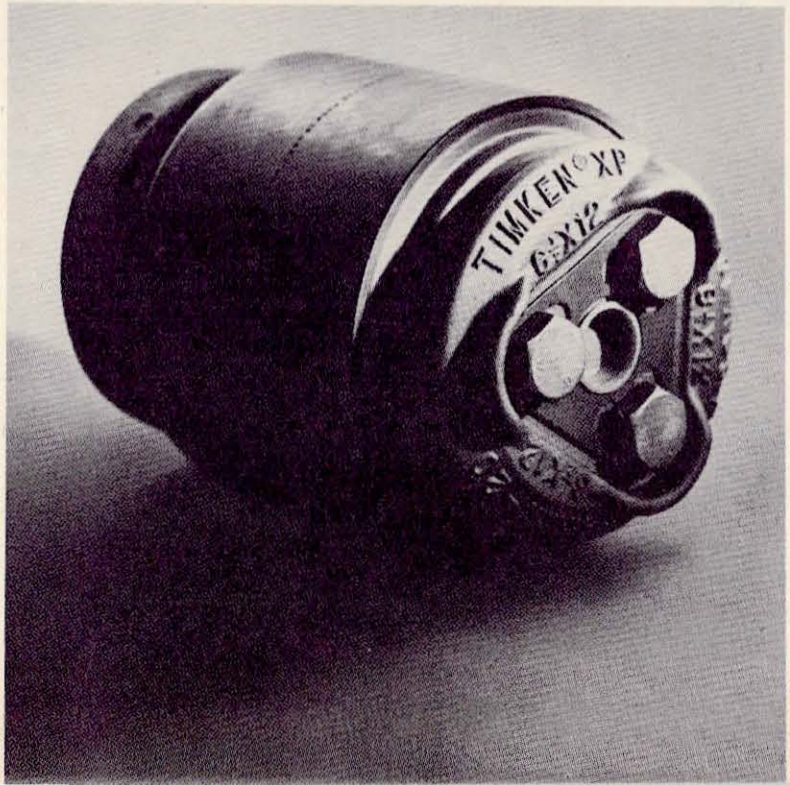

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Supers' concerns: Reliability and cost control

The American Association of Railroad Superintendents will be packing quite a bit into two and a half days, at AARS' 77th annual meeting June 19-21 in Denver. On the card will be:

—Two workshops, one on cost reduction in operations, chaired by Missouri Pacific's T.R. Foster, and the other on service reliability, chaired by Burlington Northern's E.J. Currie.

—Addresses by G.B. Aydelott, chairman and president of Rio Grande, and D.L. Manion, vice president-operations of Missouri Pacific.

—Special reports on training of operating personnel for Colton Yard by S.B. Burton, assistant vice president-personnel of Southern Pacific; on freight loss and damage prevention by M.G. Ummel, general superintendent-stations and claim prevention of MoPac; on the Chicago railroads' terminal information system by L.A. Brophy, vice president-executive director of the program organization; and on a voice train control system by R.H. Priddy, assistant to vice president, Chessie System.

—Study-committee reports on safety, presented by a group headed by H.R. Thomason, superintendent-terminals of Southern; and on employer-employee relations, prepared by a committee headed by C.W. Powers, assistant superintendent, Long Island.

● **"Within and between."** The report on employer-employee relations, in particular, covers a lot of ground—in an area where, the committee declares, "advancement has lagged." Powers' committee—which also included representatives of BN, Grand Trunk, Southern, Milwaukee Road, Penn Central and Minneapolis, Northfield & Southern—looks at the situation from two aspects, within management and between management and represented employees, and finds problems in both areas.

The group quickly dismisses sole reliance on the learn-by-doing approach as "an expensive and impractical means of creating managers." It is not much more kind toward formal programs: "The formal training program using college graduates exclusively has had some spectacular results—and many abysmal failures. Training programs using a mix of college graduates and qualified people from the ranks have fared better—but not much."

One program cited, for example, started out with 26 people and about half survived the 24-month program itself. But four years later, only three of the original group were still in operating jobs with the carrier. Powers' group calls that kind of attrition rate "a shocking waste not only of the railroad's money but also of the individuals' time in developmental years." To be sure, some of the original 26 were let go by railroad. But the others? Some didn't like being "management boomers." Some found "giant apathy" in upper and middle line management as to further individual development through guidance, counselling and so forth. Some decided they could better further their own interests by returning to the ranks or by moving on to other jobs (a number of those "other jobs" being with other railroads).

● **What to do.** How do you cope with a problem like this? The AARS committee first emphasizes the need for getting the proper people into the programs at the outset. Then, there are a few "don't" points to be kept in mind in training programs: Don't foster fragmentation of authority by making a trainee a "staff assistant" or "assistant to." Don't make errand boys out of trainees, or give them only those jobs that the superior officer finds burdensome. Don't get staff and line functions entangled. On the positive side, the committee also has a number of "do" points to be applied after the formal training period has been completed: Do make sure that superior and subordinate both know what is expected. Do give the subordinate a chance to perform. Do let him know how he's doing. Do give him assistance as needed. And do give him reward on recognition for a job well done.

> "In many ways, [railroads] lag behind other industries in [their] dealings with employees. Many of the benefits which railway labor has recently been gaining were obtained by labor in other industries in the 1950s and '60s."

Powers' group is equally outspoken in handling the management/labor question—calling the relationship with represented employees "perhaps the most serious problem confronting management in our industry."

Perhaps, too, the committee notes, "many feel that the unions have gained the upper hand in recent negotiations. . .The thought of granting railway labor any further advances horrifies many management people. This is nonsense. In many ways, we lag behind other industries in our dealings with employees. Many of the benefits which railway labor has recently been gaining were obtained by labor in other industries in the 1950s and '60s."

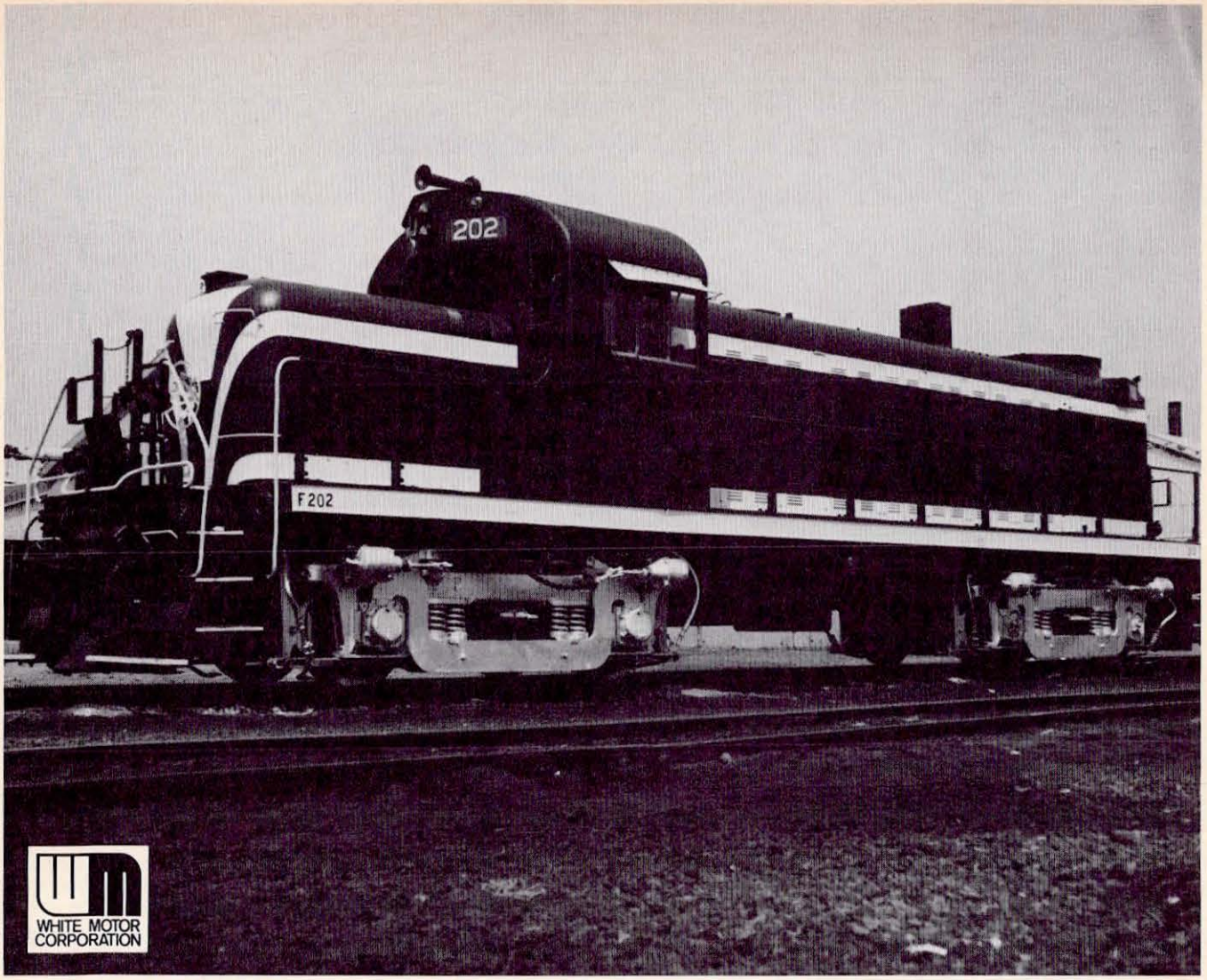
The committee talks of the need for change, and its report is optimistic: "Labor, once again, must work hand in hand with management. There must be cooperation and harmony. Enlightened railway labor leaders realize this, and changes in attitude will be revealed. If we remain at war with our employees, we will never progress."

● **Making jobs better.** As for some of the moves management might make, the committee makes a number of points with regard to increasing job satisfaction—including the expansion of initial training to include "big picture" orientation sessions in which the new employee would get an overview of the importance of both his company and the railroad industry. Powers' group also cites a training agreement on one road in which new employees in the operating area are rather quickly brought to the point where they are qualified in all classes of service. In effect, the report notes, through this agreement with the United Transportation Union, the railroad "has elected to pay these men—for they are under pay during all phases of training—to become knowledgeable employees. This railroad has universal seniority, so the trainmen have all classes of service open to them. They may elect to work in multiple-unit road passenger service in the winter and in yard freight during the summer, as their seniority allows. This program has created a measure of job satisfaction—particularly among the younger men who qualify rapidly as road conductors."

In summing up its approach to the management problem, the committee notes that "too often the dawn-to-exhaust man feels he is doing a good job by virtue of the hours he puts in, without recognizing the fact that he is spinning his wheels. The other extreme, of course, is the well-qualified man who will walk away from a problem just because he thinks it's time to go home. Therefore, we stressed both selection and training."

As for the represented employee, "all his hours, pay and fringe benefits are spelled out. It's this regimentation that has created his biggest problem—loss of identity, loss of the man who once was proud to be a railroad man. Thus, we stressed job satisfaction and the need for the man to have a glimpse of the big picture."

And the conclusion reached? "Until our employee-relations programs, top to bottom, receive the modernization the rest of the industry has, we will not turn the corner to become the viable, dividend-paying, blue-chip industry we once were. Failure to do this carries the price of nationalization. And can we afford to allow ourselves to travel that route?"



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Watching Washington

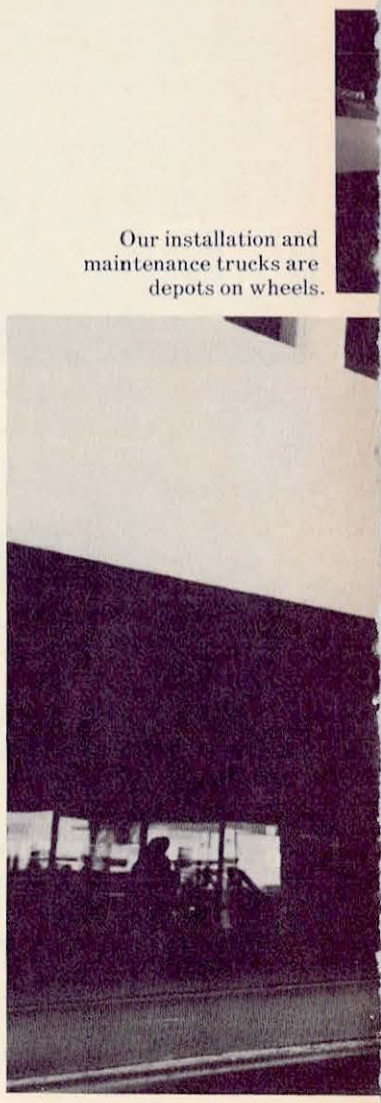
REID BEDDOW

HIGHWAY-AID ACTIVITY

Senate-House conferees are not burning the midnight oil to report out a compromise Federal Highway-aid bill. Given the intractable nature of disagreement over such issues as diversion of Highway Trust Fund monies to rapid transit and Administration opposition to operating subsidies to transit Authorities with deficits (RA, May 14, p. 20), the conferees are tackling lesser issues and may be weeks at their work. Already, Sen. Jennings Randolph (D.-W. Va.), chairman of the Senate Public Works Committee, has introduced a stopgap bill for some highway funds to be allocated to the two dozen states whose road funds will be exhausted at the end of June. It would authorize $1 billion immediately for the Interstate Highway System and $500 million for other highways, including urban highway extensions. Meanwhile, the conferees reportedly have reached agreement on a minor but important provision that would earmark "urban system" funds for urban areas of more than 200,000 population. Over three years, urban areas would get $850 million a year from the Senate version of the bill, and $700 million annually from the House bill. The effect of the conferees' new provision would be to include not just large cities, but all of a metropolitan area, including suburbs, in the allocation of these funds. In the past, these urban funds have never been allocated on a population basis.

HEADACHES AT METRO

Inauguration of passenger service on the first 4.6 miles of Washington, D.C.'s Metro rapid transit system, scheduled for December, 1974, will have to be postponed four to six months, a grim Jackson Graham, general manager of the Washington Metropolitan Area Transit Authority, told his board May 17. Earlier in the month, Graham had said that construction costs on the $2.98-billion, 98-mile project were already running $40 million above projections and at a rate that could total as much as $100 million. Other sources said the overrun could reach $280 million at the present rate of inflation. Metro sources said they were disappointed at these developments, but were quick to add they were inevitable in a project of such magnitude. They asserted that a spring, 1975 opening would still be well in time for the expected influx of visitors to the capital for the nation's bicentennial, and the overrun, on a percentage basis, was a modest enough surcharge on the project's over-all cost and far from the $1-billion overrun predicted by Rep. William H. Natcher (D-Ky.), who is known for his vigorous pro-highway, anti-rapid transit opinions. Ironically, the cause of the construction delay is attributed to a project in which rails are heavily involved: the National Visitor's Center to be built at Washington's Union Station. The Center was authorized by Congress in 1968, but its financing has consistently been uncertain because of the Penn Central bankruptcy. Only in April did C&O/B&O, one of the co-owners of Union Station, announce plans to go ahead with a $16-million financing for the center. Metro engineers need to lower hundreds of 1,400-foot lengths of rail into a tunnel beneath the site and must wait on excavations for the Center.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Swiss technology to improve ride of

Speed it has, but smoothness has not been one of the greatest attributes of the Amtrak Metroliner service between New York and Washington. The problem is of such consequence that the Federal Railroad Administration has just awarded a $3.8-million contract for improved trucks for these high-speed electrically powered trains.

● **"Most important step."** Federal Railroad Administrator John W. Ingram recently explained that "redesign of the Metroliner trucks is contemplated as the most important step that can be taken to improve the quality of ride in these passenger cars. Only when reliable and comfortable rail services are available to the public will rail passenger service be able to take its full place in the national transportation scene."

The Ground Transportation Division of LTV Aerospace Corp. was awarded the contract for the design, fabrication, testing and supply of 100 trucks for the 50 Metroliners that were acquired by the U.S. Department of Transportation and now are the backbone of Amtrak's Corridor service.

Amtrak President Roger Lewis has often observed that it is not just track, but a track/truck combination that produces smooth rides. A riding-comfort problem has plagued the Metroliners since their delivery.

General Steel Industries, which supplied the Metroliner trucks, worked to overcome the lateral and vertical stiffness which characterizes the suspension.

● **Early approaches.** Metroliners have Pirelli rubber-encased steel coil primary springs. In initial attempts at ride improvement, some cars were run with conventional coil springs. It was even then appreciated that the "softer" the truck was made within the constraints of existing castings, the better the ride.

There are other problems. The carbody sits atop air springs in which are additional steel coils that were found to surge and further complicate the ride problem. The Metroliner speed "profile" is such that the cars are also against the lateral stops for much of their 225-mile runs. Then as the cars aged, the Pirelli rubber springs showed evidence of hardening, serving to further stiffen the vertical ride mode. It has often been observed that the upgraded 20-year-old conventional passenger cars which Amtrak assigns to the Corridor runs ride appreciably better than either of the "advanced" trains operated there—Metroliners and TurboTrains.

"The Metroliners, operated by Amtrak as part of a demonstration program of the Federal Railroad Administration, have enjoyed increasing patronage by travelers in the Northeast," says Transportation Secretary Claude S. Brinegar. "The fast, clean and efficient services can be expected to attract even more passengers when these ride improvements have been accomplished."

With the pedestal truck, where journal boxes ride between vertical guides and which has long been the standard American design, wear tends to increase both vertical and lateral instability. This can be countered only with frequent wheel profiling and by regular truck maintenance.

● **The heat problem.** Another concern has been the heat transmitted into Metroliner wheels in the course of heavy tread braking—a situation that has improved substantially as the effectiveness of dynamic braking has been improved by General Electric and Westinghouse Electric in the course of refining their propulsion equipment. This heat stressing has led FRA's Rail Systems Division to consider the retrofit of disc brakes to the trucks, which proved impractical.

Today's Metroliner has probably been subjected to the most exhaustive dynamic study of any American rail vehicle. Three years ago FRA initiated a project which had two objectives:

—Determine possible improvements in the existing truck;

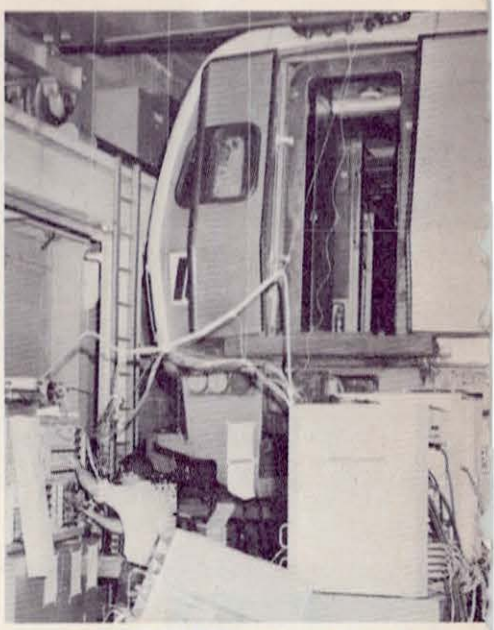
—Determine the parameters for a completely new truck.

This program centered about the dynamic simulation of a Metroliner car subjected to inputs equivalent to the track irrgularities the car encounters in service. Once developed, this simulation was systematically varied to evaluate the effects of modifying the suspension components and then to establish the requirements for a new truck.

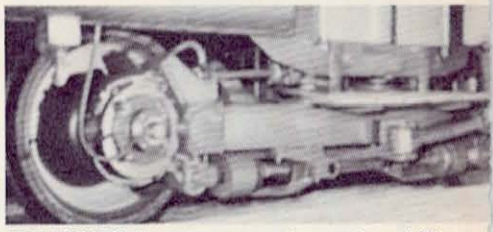
● **Service test.** A road test was performed on a single Metroliner car to examine the performance of suspension components in service. Supplementing this, measurements of track irregularities were made. In a laboratory, a series of shaker tests was performed to aid in verifying the dynamic simulation.

The Budd Company Technical Center served as prime contractor on this project. FRA directed road test and track measurements in accordance with Budd's test plans. ENSCO, a Virginia research group, was responsible for Metroliner instrumentation and for performance of the road test and of subsequent track measurements.

Laboratory tests were performed at Budd's laboratory in Philadelphia, with components of the suspension being appraised by Battelle Memorial Institute at Columbus, Ohio. The Langley Laboratory of the National Aeronautics and Space Administration processed the data from the road tests and then assisted Budd in preparing the computer simulation. Langley subsequently ran the computer simulation.



BUDD LABORATORY tests on Metroliner were correlated with road tests.



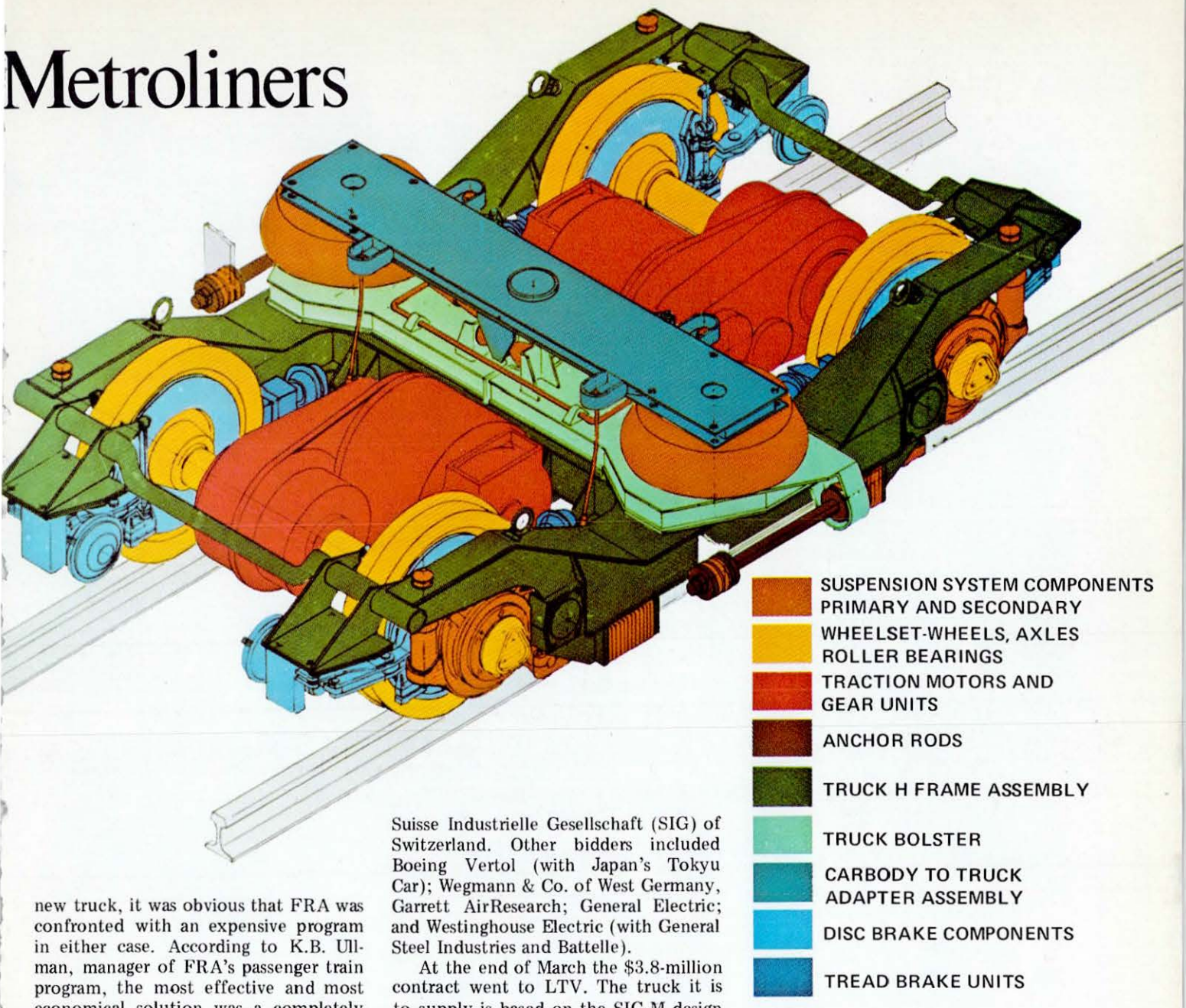
SIG TRUCK has seen extensive service; 140 of new type are on order for Europe.

After observing that the existing suspension was not isolating low-frequency track irregularities, either vertically or laterally, Budd recommended new bolster (secondary) air springs and additional damping. It noted that softer springs to counter low-frequency inputs would tend to increase lateral rolling.

Beyond this modification, the requirements for a completely new truck were also spelled out. Also studied was modification of the elastic suspension for the heavy transformer under the car, but it was concluded that modifications in truck suspension would be more effective.

● **Expensive program.** After looking at possible improvements in the existing truck and the potential in a completely

Metroliners



new truck, it was obvious that FRA was confronted with an expensive program in either case. According to K.B. Ullman, manager of FRA's passenger train program, the most effective and most economical solution was a completely new truck. In all this, FRA is functioning as the research group for Amtrak but has been utilizing its own funds.

FRA published a specification which called for a two-year, two-phase program that required fabrication of four trucks to be installed under a pair of Metroliners (one GE, one Welco) followed by test service. This would be followed by an option on 96 additional trucks for the remainder of the cars.

The physical requirements included vertical and lateral frequencies as low as possible; a "spectrum" of stability that would permit "tuning" the truck and would allow for comfortable operation with wheels worn substantially; an elimination of metal-to-metal contact.

● **Some team bids.** There were six responses to this proposal. It was required that there be service experience on both the truck frame and the off-tread braking. This found some U.S. bidders teaming with overseas firms—LTV Aerospace, for instance, participated with Suisse Industrielle Gesellschaft (SIG) of Switzerland. Other bidders included Boeing Vertol (with Japan's Tokyu Car); Wegmann & Co. of West Germany, Garrett AirResearch; General Electric; and Westinghouse Electric (with General Steel Industries and Battelle).

At the end of March the $3.8-million contract went to LTV. The truck it is to supply is based on the SIG-M design which SIG has been developing since the early 1960s in cooperation with Swiss Federal Railways and French National Railways. To achieve the long, soft springs which are so desirable, this truck uses the so-called "bellcrank" axleboxes which were first produced in the 1930s. With this mechanical arrangement, it is possible to place the primary suspension springs horizontally.

Since 1970 SIG-M trucks have accumulated hundreds of thousands of miles of experimental service. Swiss Federal has designated them as standard for future equipment purchases. Improved riding qualities and reduced wheel wear have characterized this test program.

The Metroliners will be by far the heaviest cars ever to be mounted on the SIG-M truck. LTV and SIG engineers are designing the beefed-up components which will be necessary. Disc brakes will be included capable of stopping a Metroliner at 130 mph. Space is to be provided for supplementary tread braking that would permit a complete friction-brake stop at 160 mph. FRA is requiring dynamic stability to 160 mph.

● **Two-year plan.** The truck program is to cover two years. Once the design is completed, five trucks will be fabricated in Switzerland. One truck frame will be subjected to static and fatigue tests there. After assembly at LTV's Dallas, Texas, facility, a completed truck is then to be subjected to dynamic testing. If there is no hitch, the additional four trucks will be put together in Dallas. It is hoped these trucks will be installed by Jan. 1, 1974, and that running tests can be completed during February 1974.

The contract allows FRA 365 days to exercise its option on the additional 96 trucks. This should mean that by the end of March 1974 a decision will be made on extensive installation of European-developed trucks under American passenger cars. ■

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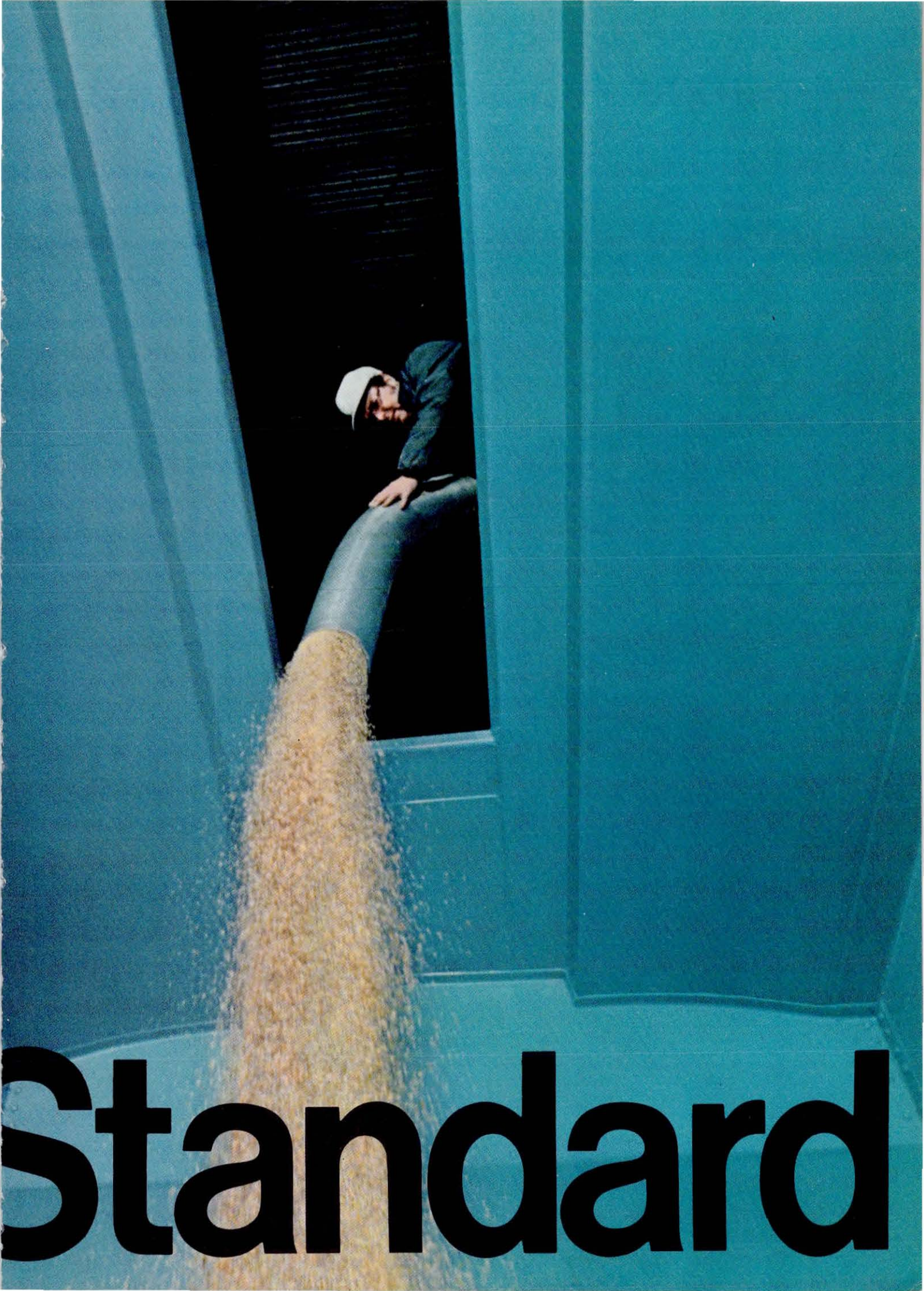
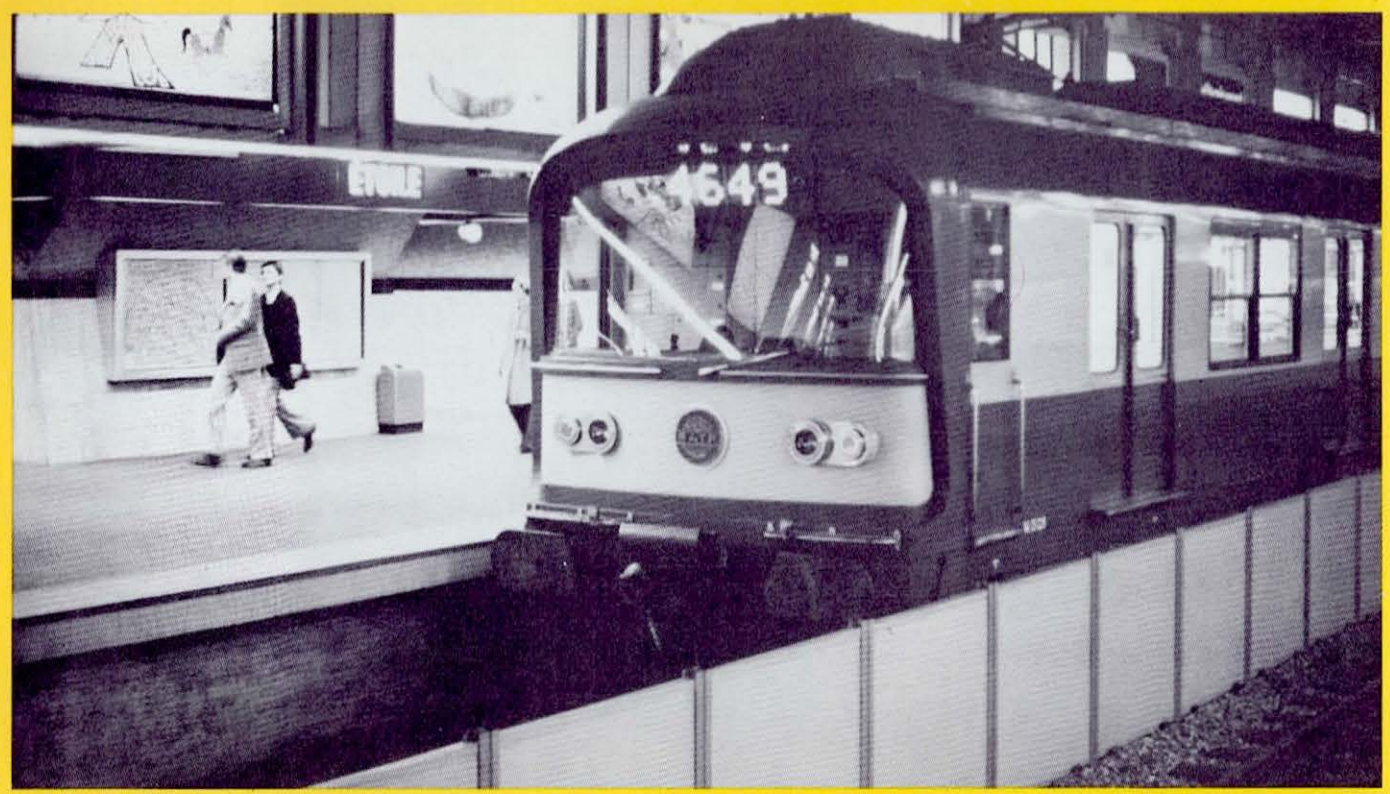

Standard

Europe: A here-and-now approach

No part of the world is more advanced in "far out" transportation (e.g., magnetic suspension and tracked air cushion vehicles) than Western Europe. But as it plans for tomorrow, Europe is busily building for today, putting here-and-now technology to work to meet here-and-now intercity and intracity needs. Members of the 1973 Railway Age Rail/Transit Seminar Tour saw ample evidence of this during an early-May swing through the U.K., France, Belgium and Holland. Said one of the participants: "Europe is surpassing the U.S. as far as moving people is concerned. They have technologically outdistanced us and we have little to give them." A sampling of what was seen is presented in this report.

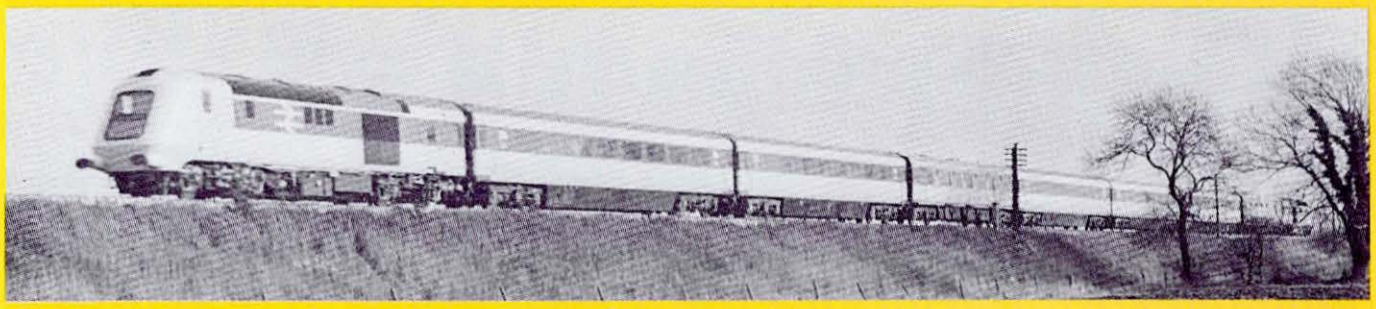
—Robert G. Lewis



PARIS REGIONAL EXPRESS line was rated as an "outstanding example of a high-class commuter operation with conventional equipment" by one observer. It makes provision for eventual conversion to some advanced concept as transit technology evolves. Platform-height "screens" between the tracks serve to absorb virtually all rail-contact noise; automatic change makers, ticketing and fare collection got high marks from tour members. Frequently complimented in all the cities visited was the full information on routes and interchanges which is readily available to patrons.

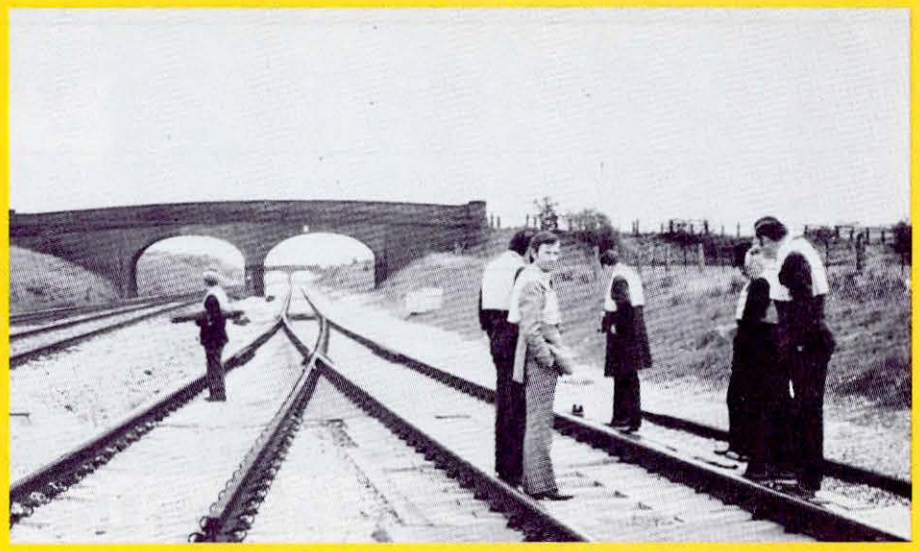
FRENCH TURBO, a prototype of equipment soon to be delivered for Amtrak's Mid-western intercity service, was observed during hour-long scheduled run from Paris. Impressive was routine operation of 100-mph passenger services, integrated with frequent freight trains. The use of high-speed electric and diesel (as well as gas-turbine) multiple-unit trainsets, many of them very conventional, was observed in Great Britain, Belgium and the Netherlands, as well as in France.

to here-and-now transit challenges



BRITISH RAIL research at Derby is working diligently on the Advanced Passenger Train which is now undergoing road testing. Two 2,250-hp diesel power cars at the train's ends and seven intermediate coaches feature air-cushion suspension to assure quiet, smooth ride at speeds to 125 mph. Britain looks to substantial overseas market for APT when this train and its all-electric counterpart are fully developed.

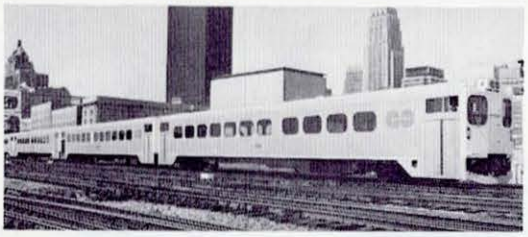
LONDON UNDERGROUND has zoned fare collection and is working to automate the process. Victoria Line automatic train operation was checked closely. Other London subways, said one U.S. transit man, "move a lot of people dependably with old equipment." Also impressive was the extensive bus operation that augments rail service and government policy which discourages center-city parking, forcing the use of public transportation.



TRACK RESEARCH at Radcliffe includes slab turnouts designed for 75-mph operation with virtually no maintenance. Track experts on tour were "most impressed" with this development and with BR's work with concrete ties.

BRUSSELS METRO system involves 19 municipalities "moving people now and planning for the next quarter century," as one U.S. observer put it. As funding becomes available, Brussels is going through a "pre-Metro" phase which will initially convert surface trolley system to an underground, with provision for eventual conversion to full-fledged rapid-transit train operation. Right now a few blocks at a time are put below street level, rather than participating in a city-wide orgy of tunneling.

We helped break up the love affair between the commuter and his car.



Thousands of commuters in the Province of Ontario have happily kicked the daily car habit.

They're kissing goodbye and riding to work by GO Transit. Operated by the Government of Ontario, this rapid transit system is 60 miles long and one of the most highly regarded in North America.

The system has many appealing features. One is the cars. They're quiet and comfortable. Cool in summer. Warm in winter. Easy to enter and leave.

We built them and we built them quite differently. Our cars are unusually long: 85 feet. And, through the extensive use of aluminum, they're remarkably light, too. About *half* the weight per foot of length compared to conventional steel cars.

This means substantial savings in initial cost, power requirements and many aspects of maintenance.

Our experience in building this advanced type of commuter and mass transit car is unique in North America. We've proved it in Montreal with the Expo mass transit system. And in Ontario with GO Transit and the Toronto Transit Commission's subway system.

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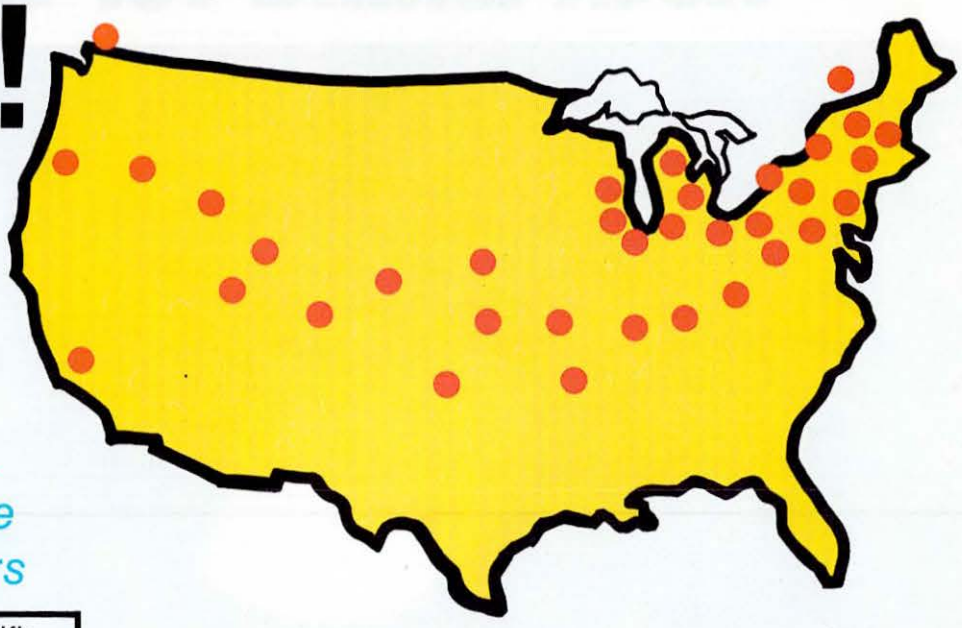

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"Shell's Tornus® Oil has Rock Island for cleaning up

a proven record on the engine deposits."

Frank Findling, CMO-Rock Island Railroad, adds: "We've extended oil filter changes to 30 days on GE's; 60 days on EMD's; and lengthened oil changeout periods, too, with TORNUS Oil."

Late in 1971, Rock Island Railroad locomotives were experiencing oil-related mechanical problems. The railroad operates 610 locomotives—213 are rated 2500 to 3000 HP; 104 are GE's, 109 EMD's.

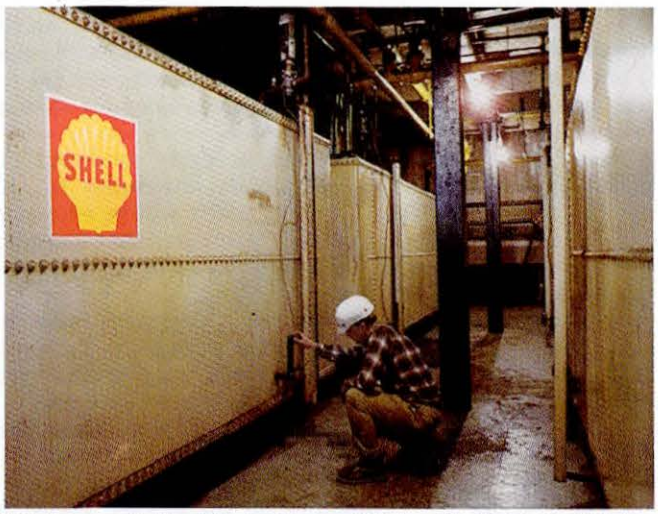
Before switching to TORNUS, oil filter changes were being made every 15 days on the GE's; every 30 days on the EMD's. Oil was being changed every 90 days in the GE's; every year on the EMD's. High oil and filter consumption provided an area where the right oil could reduce costs.

TORNUS Oil stopped the problem; started saving money.

Chief Mechanical Officer, Frank Findling, and Asst. Chief Mechanical Officer, John Gann (see photo left), took steps that cleared up the situation in a hurry. They started using Shell TORNUS Oil.

TORNUS Oil is a total product—with a specially refined base oil and a matching additive system which resists formation of sludge, carbon and varnish deposits, while protecting critical engine parts.

Within a short time the oil-related mechanical problems began to disappear. Today, oil filter changes have been extended from 15 to 30 days on the GE's and 30 to 60 days on the EMD's. The oil change interval for the GE U-25's is 1 year; 6 months on the GE U-28's and U-33's. EMD oil changes are controlled by lab analysis.



Oil house at the Silvis Shops, Silvis, Ill. TORNUS Oil is stored in 4 heated (130°F) 12,000-gallon tanks. TORNUS is a total product—has its own specially refined base oil and matching additive system which resists sludge, carbon and varnish deposits, while protecting critical engine parts.

◀ Frank Findling (foreground), CMO-Rock Island Railroad, and John Gann, Asst. CMO, inspect top deck of GE U-28 engine in Rock Island Locomotive Unit 278 at the Silvis Shops. Both are staunch supporters of Shell TORNUS Oil because it keeps their engines clean—and it extended filter life and oil change-out periods, cut maintenance costs.

Modern Locomotive Repair Dept. in Silvis Shops where all GE locomotives are maintained and heavy overhaul for all system units is performed.

Result? Rock Island motive power is spending more time hauling payloads on the road, less time in the repair shops. Naturally, cost reductions followed reduced oil and filter changes.

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Your Shell Transportation Sales Representative is the man to see for full details about TORNUS Oil and its money-saving possibilities for you. Call him at the Shell office nearest you, or write: Shell Oil Company, Attn.: Mgr. Commercial Advertising, One Shell Plaza, Houston, Texas 77002.

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Why an orderly transport growth

By ROBERT BARTLEY
Associate Editor

RAIL COMMUTER STATIONS, like the TTC subway stations, have attracted new building. Port Credit, upper left, was re-zoned when GO Transit established service in the area. Mississauga, lower right, chose to maintain single residence zoning.

FROM THE AIR, it's easy to tell where the subway stations are located. New developments have a habit of springing up near stations, like this one between the Keele and High Park stations west on the Bloor-Danforth line.

Translated, the old Huron Indian name, Toronto, means "place of meeting." The name will take on a special meaning for North America's top public transportation planners and operators as they gather in the capital of the Province of Ontario June 26-29 for the annual meeting of the Institute for Rapid Transit.

As these transit leaders will quickly learn, Metropolitan Toronto, so far as public transportation and urban planning are concerned, is doing an excellent job of living up to the meaning of its name. A refreshing willingness by the provincial government on the one hand and the city and its 12 suburbs on the other to meet and work together to avoid urban strangulation has earned this thriving area the reputation of being a public transportation showcase. While others plan and talk, Toronto plans and digs; while others plan and consult, Toronto plans and lets contracts; while others plan and haggle, Toronto plans and grows.

Because the 2.2 million people living in the 240-square-mile area known as Metro Toronto are getting action in the realm of public transportation, they are supporting it. The various modes of transportation serving the area have been blended into a system that is meeting present public needs and at the same time encouraging orderly urban growth.

● **Maybe soon, a central agency.** Thus far, the Metro area has been able to attain its transportation goals without the aid of either a regional transit board or financial assistance from the Canadian government itself. It seems inevitable, though, that changes will be taking place. Perhaps this year the area will see a central controlling agency for public transportation become a reality. And, while it may not happen in the very near future, there is a growing feeling that the Canadian government will have to become involved—financially and otherwise—in the picture.

Public transportation in the Metro area is composed of two basic systems—the Toronto Transit Commission lines and GO Transit. TTC, older of the two, operates all passenger transit facilities within the Metro area except for railways and, of course, taxis (which might be regarded as the area's third system). Actually, TTC is an integrated network of subway, street car, trolley bus and regular bus lines. Together, they operated 73 million vehicle miles last year.

GO Transit, Ontario's government-sponsored rail and bus commuter system, is relatively new (the first train was operated in May 1967) but has quickly assumed a key role in the movement of people to Toronto along the Lake Ontario shoreline from Oakville on the west and Pickering on the east. This 42-mile system carried more than 5.4 million passengers last year. Canadian National operates the trains on CN right-of-way for GO Transit, which specifies the type of service, fares, schedules and other policies. It also furnishes capital funds and provides an operating subsidy amounting to approximately $2 million a year.

● **Big plan.** Both TTC and GO Transit are forging ahead with expansion plans and with the development of new concepts aimed at providing Metro residents with even better services. Here are some of the things happening or about to happen in the area:

—A $16-million test demonstration contract has been awarded that will bring a most unusual intermediate capacity urban transportation operation to the lakeshore area by 1975.

—A 2½-mile section of the north-south Yonge Street subway's 5½-mile extension opened in March, and the remaining section is scheduled for opening next spring.

—Dial-a-bus, a highly successful experimental project introduced by GO Transit in July 1970, will be expanded into the north Metro area later this year, with 25-30 new buses targeted for the service.

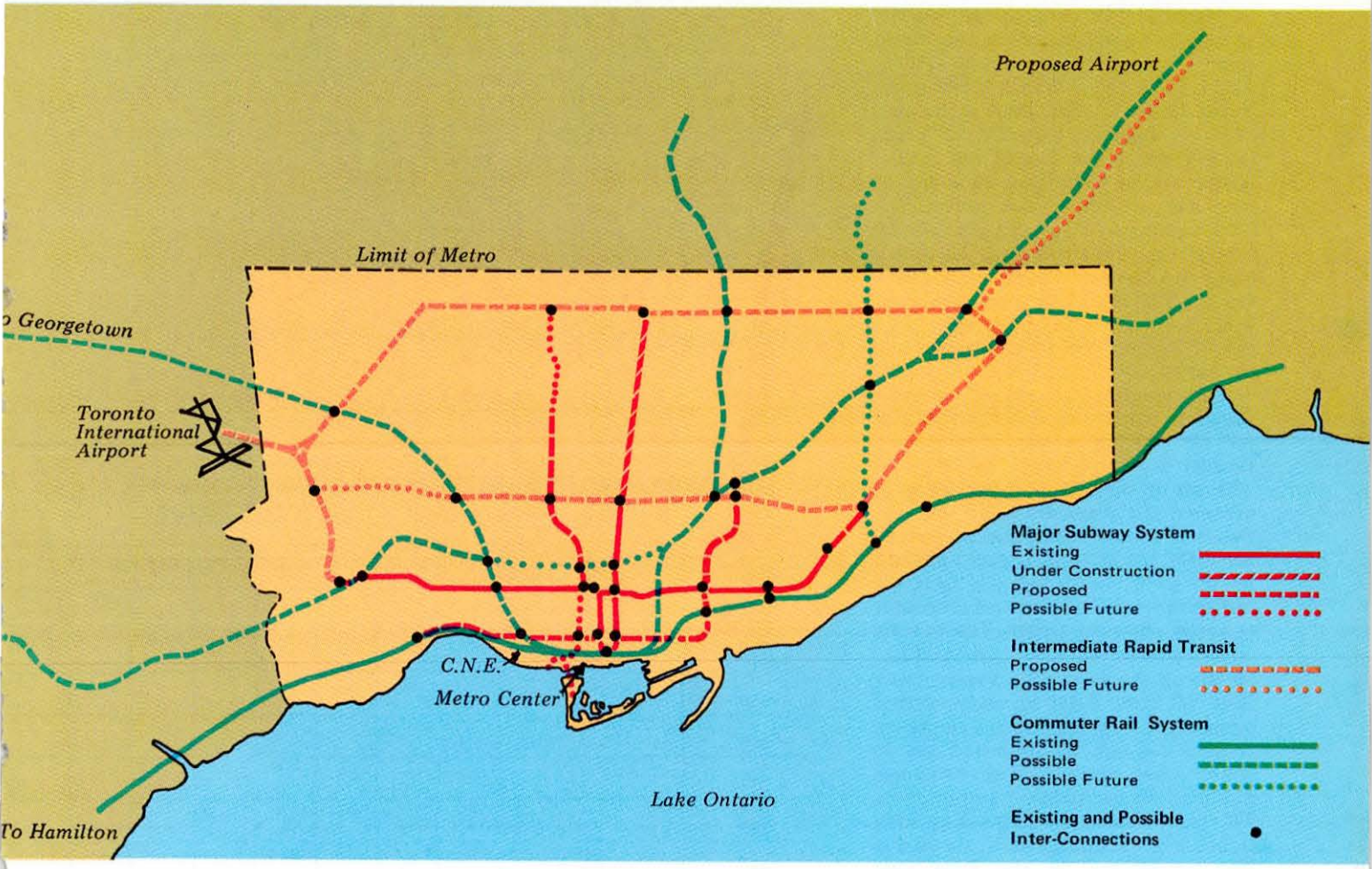
—In the fall, GO Transit plans to introduce limited rail service northwest on the CN between Toronto and Georgetown, a distance of 29.4 miles.

—Later this year, 30 new coaches and four diesel electric locomotives will join the GO Transit equipment fleet.

—Another 88 transit cars, valued at $25.4 million, have been ordered by TTC from Hawker-Siddeley.

The $16-million test demonstration project for an intermediate capacity system at the Canadian National Exhibition grounds on the Toronto lakefront represents one of the boldest transportation steps undertaken by any North American government in recent times.

makes Toronto's system a showcase



In announcing to the legislature the selection of Krauss-Maffei A.G., of Germany, as the prime contractor for the 2.5-mile demonstration project, William G. Davis, premier of Ontario, said the contract "will provide the basis for Ontario to assume a leadership role in transportation development. . .and the many benefits will come in the form of transportation facilities unequalled anywhere."

The impending needs of growing municipalities in the province—not in just Metro Toronto alone—caused the government to seek out the type of intermediate transit system that could carry up to 20,000 people an hour in one direction. Eight companies submitted proposals for an intermediate capacity system. The list finally narrowed down to two possible builders (Hawker-Siddeley Canada Ltd. was the other) before the contract was awarded to Krauss-Maffei.

● **Linear induction, and MagLev, too.** Special features of the demonstration system, which is expected to be ready for test in 1974 and in operation in time for the Canadian National Exhibition in 1975, are:

—Propulsion will be provided by linear induction motors (LIM) rated at 200 horsepower each and operating on alternating current converted from a direct current power source.

—Suspension will be magnetic levitation (MagLev) which will lift the car and also maintain separation from the track.

—Three computers, two for enhancing safety and the other for improving reliability, will give the system full automation.

—The elevated box beam guideway, less than three feet wide, will accommodate the LIM reaction rail, the armature rails for the magnetic suspension and the power rail.

—Maximum speed of the vehicle will be 50 miles an hour, headways will be 15 to 20 seconds, and there will be four off-line stations.

—Importantly, noise levels at 25 feet will be less than 60 decibels.

—Vehicle capacity is 12 seated, eight standing. Size of the vehicle will be 19 feet, 8 inches long; 6 feet, 7 inches wide; 9 feet, 3 inches high. The weight will be 12,100 pounds.

If the test demonstration proves successful, perhaps the initial location of a full-scale intermediate capacity system in regular service will be along the approximate route of the proposed Spadina expressway which the public doomed in a special vote two years ago. This north-south transit route, west of the existing Yonge Street subway, would siphon off some of the riders now using the extremely busy Yonge line. At the moment, government planners seem to be leaning toward the eventual installation of a system similar to the one that will be test demonstrated at the exhibition grounds. TTC, on the other hand, seems to be in favor of another high-capacity subway system. While they may differ on the type of system to be used along the Spadina route, the two agencies are close in selecting the route to be followed.

Their opinions of concepts and selections of routings may differ at times, but TTC and GO Transit have been able to work out the differences in the past

without lengthy hassles. In the process, the public ends up the winner, and maybe that's why public transportation enjoys such a good reputation in the area.

● **Subway is the focal point.** The backbone of TTC (and, for that matter, all public transportation in the Metro area) is the 23-mile subway system. Aside from the J-shaped north-south Yonge-University line, there is the east-west, or crosstown, Bloor-Danforth line. Supplementing and feeding this central system are 88 bus routes, 11 street car lines and six trolley bus routes. The TTC equipment fleet consists of 410 subway cars, 418 street cars, 152 trolley buses and over 1,000 buses. Gray Coach Lines, a TTC subsidiary, owns 228 buses which are used in inter-city operations out of Toronto and to supplement and extend GO Transit's commuter rail line.

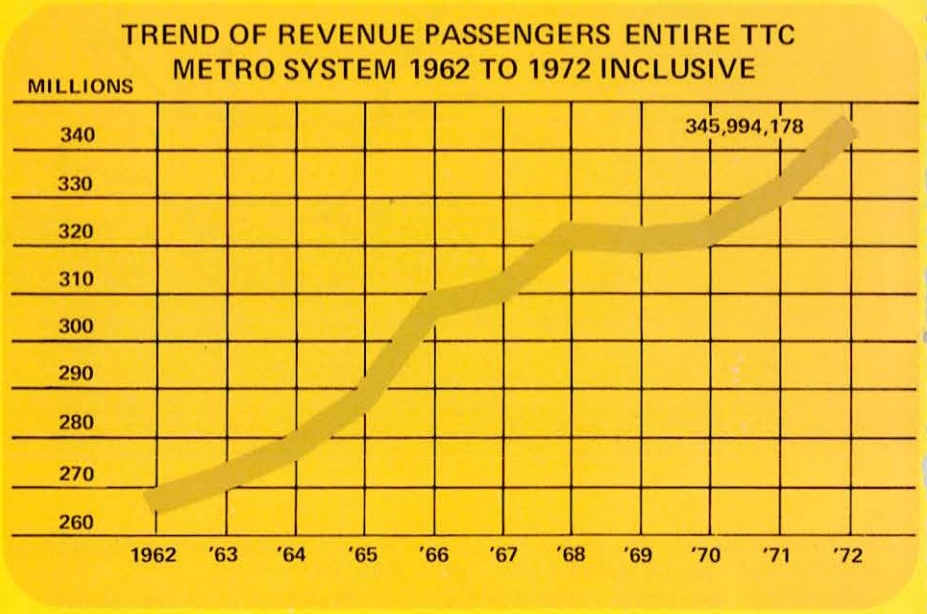
Last month, TTC placed an order valued at approximately $25.4 million for 88 new lightweight subway cars. Hawker Siddeley, which has supplied 328 cars on the TTC fleet (including 76 delivered last year) will build the cars. Delivery is scheduled to start in September 1974. Aside from changes planned for the truck, motor and gear areas, the cars on order will be essentially the same as those delivered earlier. The changes are being made to improve ride quality.

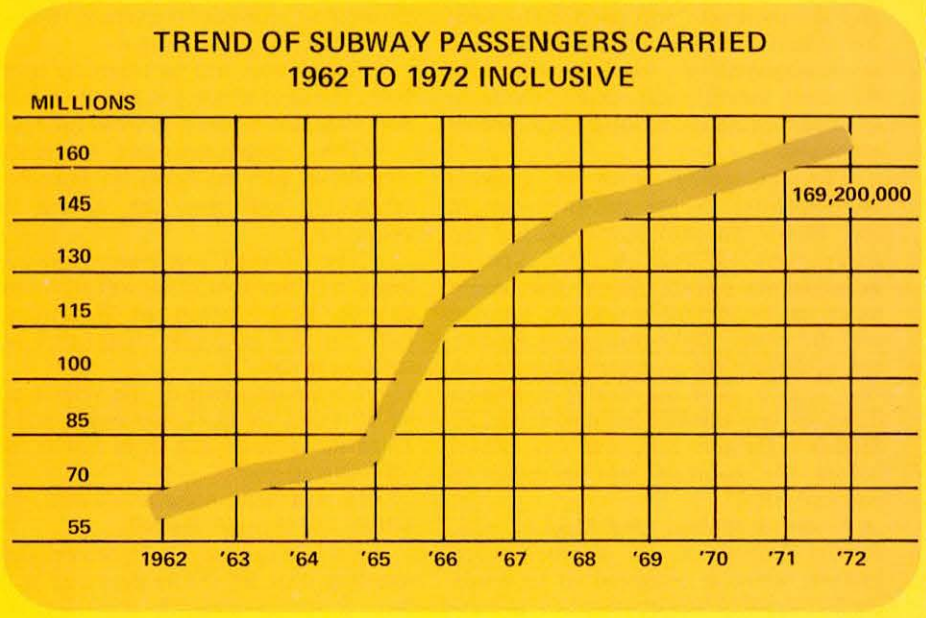
● **GO on the move.** GO Transit has a fleet of eight 3,000-hp diesel-electric locomotives, 54 streamlined aluminum coaches and nine self-propelled cars. In winter when weather often encourages motorists to use public transportation, GO Transit has at its disposal an additional fleet of coaches which are used in the summertime on the Polar Bear Express, an excursion train operating between Toronto and Moosonee, on James Bay.

An additional 30 new coaches and four locomotives are on order for GO Transit with delivery scheduled for 1973-74. Hawker Siddeley, which has built all cars in the existing GO Transit fleet, will also supply the 30 coaches valued at $6 million that will be coming on line later this year. These coaches will be virtually identical to the ones furnished earlier by Hawker-Siddeley. "Since we aren't making any major changes in the cars, it should be fairly obvious that we are pleased with the way they've been performing," advises W.T. Howard, GO Transit's director of transportation operations.

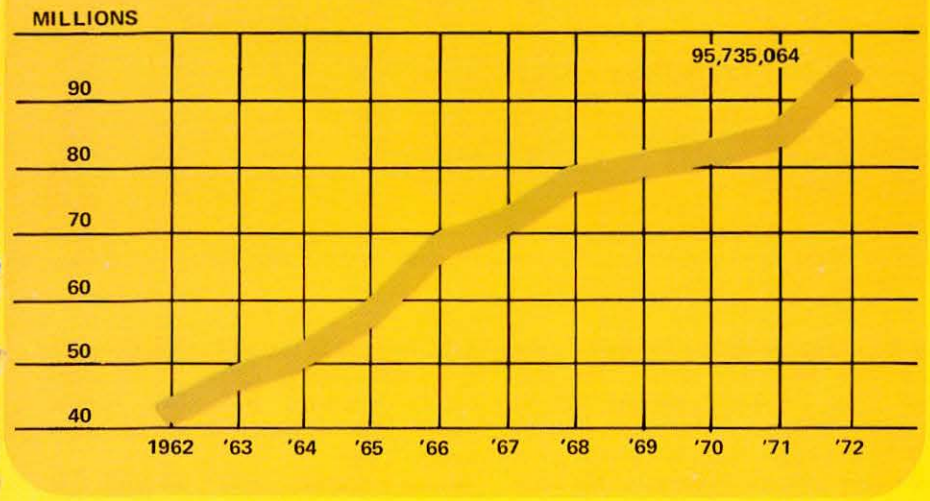
Changes are being made, however, in the type of locomotives on order. Unlike the original eight, which were outfitted with auxiliary diesel/alternator sets, the new ones will be standard GP-40s. Meanwhile, five cab cars in the push-pull commuter fleet are being altered in CN shops in such a manner that they will carry their own auxiliary system. This conversion program is similar to one undertaken by the Long

The trend in Toronto is toward transit

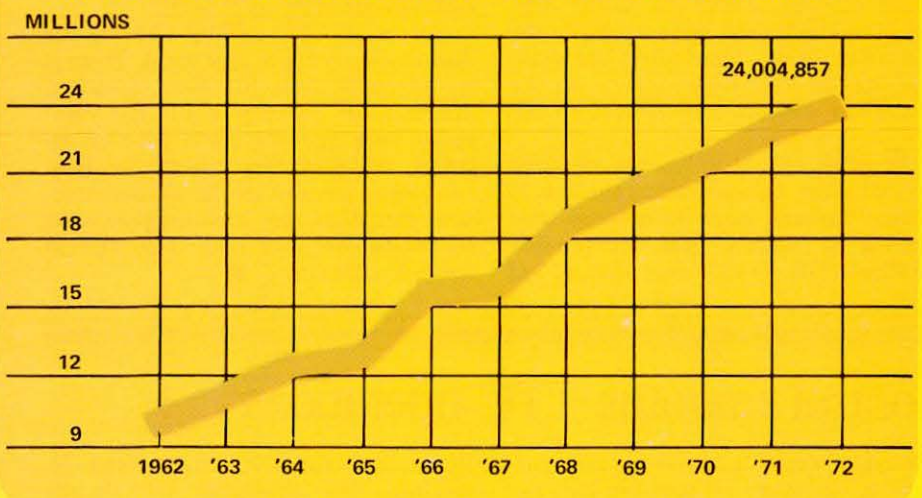




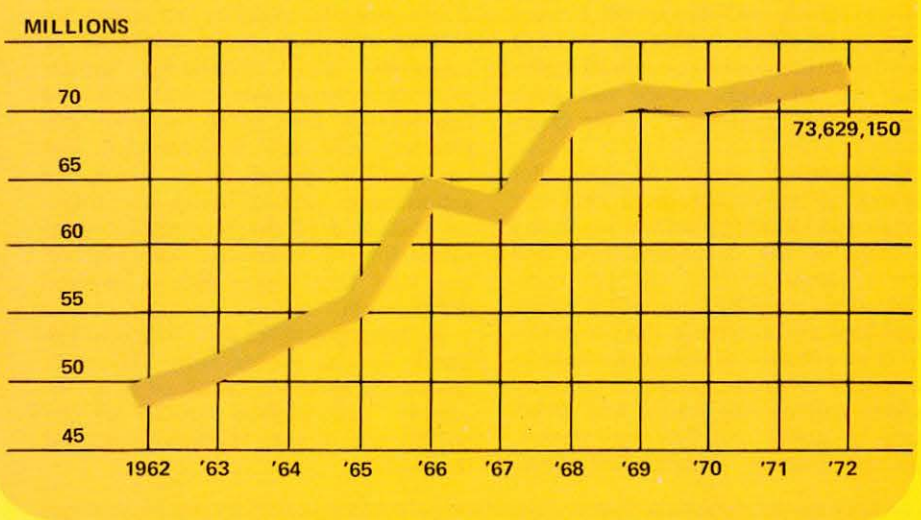
TREND OF REVENUE PASSENGERS CARRIED BY THE TTC IN METRO SUBURBAN AREAS 1962 TO 1972 INCLUSIVE



TREND OF MILES OF TRANSIT SERVICE OPERATED IN METRO SUBURBAN AREAS 1962 TO 1972 INCLUSIVE



TREND OF MILES OF TRANSIT SERVICE OPERATED ENTIRE TTC METRO SYSTEM 1962 TO 1972 INCLUSIVE



Island some time ago for its commuter fleet.

● **And digging continues.** Aside from the announcement of Ontario's awarding of the test demonstration contract for the 2.5-mile intermediate capacity transit system, the big story in Toronto this year has been the opening of the 2.68-mile extension northward of the Yonge subway line. Opened officially March 31, this extension knifes through what is perhaps the fastest growing area of Metro Toronto. Meanwhile, work is continuing on the remaining section of the extension which will terminate at Finch Station. When the Finch extension is completed—in Spring 1974, or maybe sooner—Toronto's subway will be about 26 miles long.

The estimated cost of the 5½-mile extension from Eglinton Station to Finch is $140 million, with the Province of Ontario, Metropolitan Toronto and TTC sharing the cost. With the Metro area growing at the rate of about 50,000 persons a year, subway capacity is having a tough time keeping up with this growth. At rush hours, the subway system is loaded to the gunwales and there doesn't appear to be any relief in sight until something like a Spadina line parelleling the Yonge line becomes a reality.

Right now, the priority item for the future has to be the Spadina line, from Wilson Ave. to the St. George subway station on the Bloor-Danforth line. Actually, provincial approval to build a subway line partly along the Spadina route has been given. Estimated cost of the line, which would be about four miles long, is $155 million, with the Province of Ontario picking up 75% of the tab. All that's needed now to get the plan moving is Metropolitan Toronto approval. TTC, of course, is very much in favor of the route. Meanwhile, it is felt that the Bloor-Dansforth line should be extended at each end to better serve the growing Metro area. Next in the priority line is a new subway route along Queen St., in the section of Toronto close to the lake, which could better serve the downtown area. Planners visualize this line swinging north on the east side of the Yonge line and penetrating the rapidly expanding population centers in the Thorncliffe and Don Mills area of Metro.

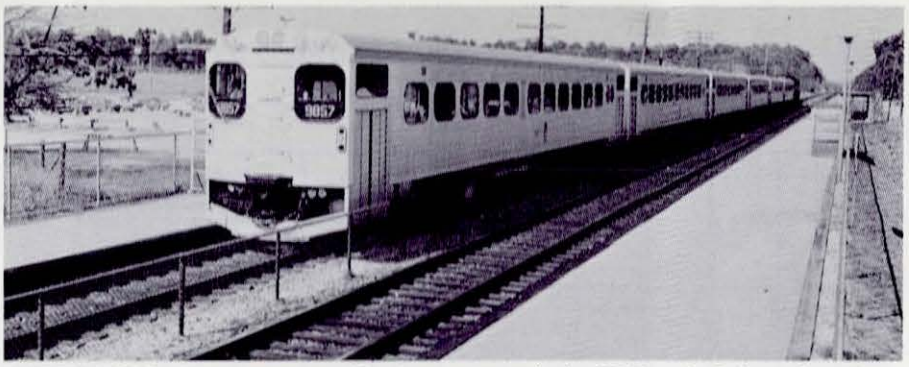
● **More rail commuter lines.** Considerable activity in expansion of the rail commuter system in the Toronto metropolitan area is anticipated. Aside from the 29.4-mile Georgetown run on CN right-of-way leading northwest out of the heart of the city, scheduled for operation later this year, transportation planners are taking a long, hard look at other rail lines. A Canadian Pacific Rail line leading west from the downtown area is being looked at. A commuter line to the north along a route to the east of the Yonge subway line is a very distinct

possibility. Another line leading east, but inland from the shoreline where the existing Lakeshore commuter line operates, is also part of the area's long range transportation plans. Another likelihood is a crosstown commuter line, also away from the shoreline. In all cases, efforts would be made to permit interfacing with existing and proposed subway lines.

Rounding out the long-range plans for keeping the Metro area unsnarled as it grows are the intermediate capacity rapid transit lines which would, more than anything else, feed passengers to and from the high capacity subway lines. Performance of the test system that will operate in the Canadian National Exhibition grounds will determine to a great extent the time at which these intermediate capacity systems will appear elsewhere in the Metro area.

● **Billions in new construction.** The subway system, the commuter line and other public transportation routes have acted as magnets for construction of new buildings. Billions upon billions of dollars worth of new construction has taken place within five minutes walking distance of subway stations. Perhaps nowhere on the North American continent (not even along the BART lines in the San Francisco Bay area) can a public transportation system's influence on new construction be seen more clearly than in Toronto.

● **Dial-a-bus popular.** To entice the commuting motorist out of his car and into public transportation, GO Transit has been experimenting for quite some time with Dial-a-bus service. The fact that plans are being mapped out to expand this service and acquire up to 30 new 11-passenger buses is a pretty good indication that the experiment has been successful.



THIRTY MORE rail commuter cars like these are on order by GO Transit. Delivery from Hawker Siddeley is scheduled for later this year.

GO Transit's Howard sees Dial-a-bus as "the ultimate way to provide a feeder system for rail commuter lines in the suburbs." Scores of commuters in the Pickering area, where the experiment has been conducted, have developed the Dial-a-bus habit. When they had available regular bus route service to the commuter station, they refused to use it.

In other efforts to lure the motorist out of his car, transportation planners in Metro Toronto have introduced free parking at stations plus kiss-and-ride facilities. GO Transit says that it has given thought in the past to charging for the 4,600 parking spaces at its commuter stations, but then simple mathematics show that it probably wouldn't pay.

● **Low vandalism.** Both GO Transit and TTC officials say that, unlike many of their counterparts south of the border, they are not plagued with vandalism and other forms of social misconduct. Occasionally, windows in cars are smashed and seats are slashed.

All in all, the mobility outlook for Toronto residents is very good. There is an admitted need for more subways, intermediate capacity lines, rail commuter lines and for some type of regional transportation agency to keep everything pointed in the proper direction. But, there are metropolitan areas the world over that wish they were as well off as Toronto. ■

Centralized control smooths TTC operations

Communications, subway signal control and power control for the Toronto Transit Commission are centralized at the Hillcrest administration building. Here, in one central office, the control, monitoring and supervision of TTC's surface and subway operations are carried out. This centralized control makes it possible to meet unusual or emergency conditions quickly and efficiently on a system-wide, coordinated basis.

● **Three basic controls.** Three separate, but inter-related functions are carried out at the transit control center. Communications facilities include two-way radio between transit control and a fleet of 65 emergency and supervisory vehicles; a public address system to all subway stations; two-way communications between subway trains and the center; and a system of public and private dial telephones including direct lines to police and fire departments.

Subway headway supervision and control are achieved with a control machine having a track diagram panel for observing train movements and permitting operation of switches and signals on the 23 miles of line.

TTC's power control room provides 24-hr monitoring and control of both subway and surface line electrical substations.

All three control centers—communications, signals and power—are located in adjacent offices with glass dividing walls to permit continuous visual supervision of all areas. Space has been provided for expansion of these facilities.

● **Coordination vital.** A controller working at a console on a centrally located and elevated platform supervises activities of the communications and subway signal controls. He has communications facilities including radio, telephones and intercom lines to transportation officials, as well as the links to the public address system at subway stations and on the trains, and direct access to police and fire departments. Also, his console contains fire alarm, smoke detector and other alarm indicators. The controller can visually scan the power control center and establish instant communications with the power controller. He can establish communications between TTC's communications, power control, signal control and emergency crews. Dispatchers at six consoles receive and assess incoming calls from radio, telephone or intercom lines, dispatching mobile supervisors, inspectors, repair crews, or maintenance men when required. All received calls are time-stamped and recorded on special forms where the action taken is also noted. The forms are then sent to the concerned departments for any follow-up. Daily logs are also kept with copies sent to involved departments.

A teletypewriter also connects the transit control center with TTC headquarters from which details of delays on subway and surface routes can be quickly passed onto the newsmedia and the public.

WABCO is: A train without cars and a classification yard with thousands.

In the lab at our Air Brake Division, we've simulated the entire braking system of a 300-car train. Our "ghost train" is, of course, minus locomotives and cars. However, we can program our lab into situations that can occur on a real train and determine the effects and outcome. This helps assure the advanced braking equipment we produce will safely and reliably increase your car utilization and productivity.

Braking cars in a classification yard is different, but we do that, too. Our Union Switch & Signal Division makes highly automated classification yard control systems. They expand the capacity of yards without expanding the geography. We have some yards handling over 3,000 cars per day.

These are only a few of our activities and capabilities. We make the "stop" and "go" of our customers car fleets as efficient and productive as possible. We're the WABCO Transportation Systems Group, Westinghouse Air Brake Company, Three Gateway Center, Pittsburgh, Pa. 15222.

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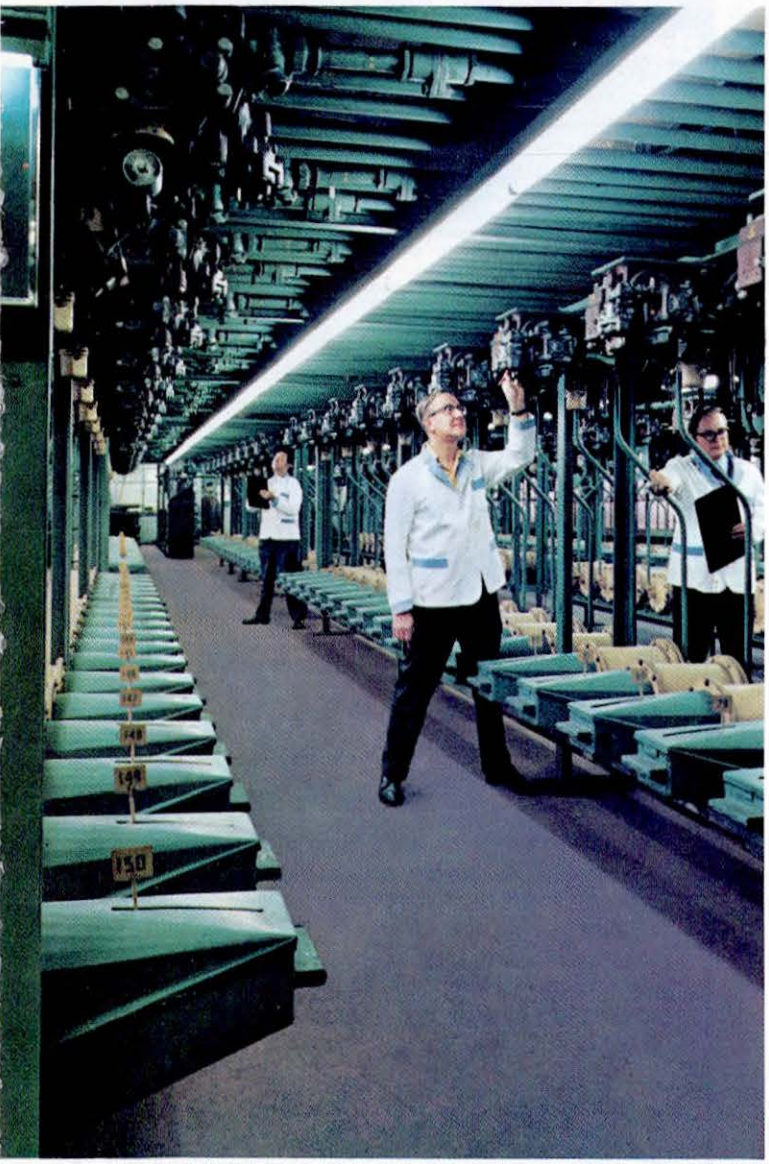

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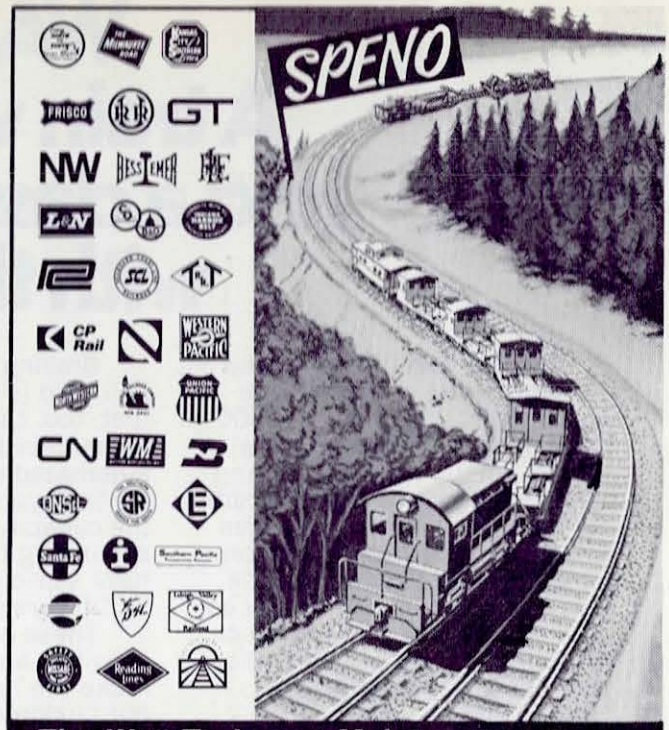

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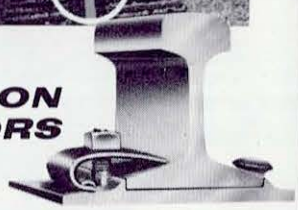

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FULL-WIDTH nose and cab doors opening only to the rear are features of new 2,000-hp road unit; reflectorized band covers the running boards.

CN gets its first M420 diesel

Officers of Canadian National and MLW Industries gathered at Montreal's Central Station recently to mark the delivery of the first of 30 new locomotives for CN. The 2501 is also the first unit of a new model of 2,000-hp road locomotive being introduced by the Canadian builder. It features a new front end and cab arrangement which are the product of a CN task force aiming to improve the effectiveness, comfort and safety of locomotive cabs.

Following the CN order, MLW will build two more M420s for the Providence & Worcester, the new New England short-line (RA, Feb. 26, p. 14). This will mark MLW's penetration of the locomotive market in the U.S.

MLW builds locomotives utilizing diesels of the Alco type and the M420 has a 12-cylinder Model 251 engine. This engine drives a new design of traction alternator that in turn feeds a restyled rectifier bank to supply direct current for the traction motors.

● **High-adhesion truck.** The M420's high-adhesion truck incorporates a complete rubber suspension for all modes of motion—rotation, lateral and vertical. Most important is the "zero weight transfer" feature of this truck for which MLW is seeking a patent and which has been in regular service on two switcher-type M420TR units delivered to Quebec's Roberval & Saguenay last year. Absence of weight transfer enhances the starting characteristics of the locomotive.

DELIVERY found R.L. Grassby (left), MLW president, turning over unit with new cab to K.E. Hunt, Canadian National's vice president-operations and maintenance.

The new cab concept increases crew comfort and provides better visibility, greater protection, and new features. "MLW built the M420 according to a brand new set of specifications on the safety design factors submitted by Canadian National," explained K.E. Hunt, vice president-operations and maintenance of CN. "Less than two years ago, a project group was established to study the work environment of locomotive engineers, with active participation by the engineers themselves.

"The group looked at the structural integrity, even though the locomotive cab up until now has been quite sturdy and, in many respects, in advance of general standards in the industry. CN design people came up with:

—Stronger cab corner posts;

—A new frontal position for the sand box so it could cushion any impact;

—Half-inch thick steel in the nose instead of the former 1/8-inch thick steel over a frame;

—Rear opening doors on the cab proper plus a third door in the nose."

● **Full-width nose.** The nose also extends the full width of the locomotive to protect the cab corners and anti-climbers are installed across the ends of the locomotive frame. Collision posts in the nose now extend its full height.

Front and rear cab windows are defrosted electrically and side windows are double-glazed and set in frames with thermal barriers to inhibit transmission of cold to crew members. The cab is heavily insulated which also serves to reduce the noise level well below 90 decibels set by Canadian environmental regulations.

The cab has the new AAR standard controller and features an 8-inch speedometer mounted over the front windows where it is visible by anyone in the cab. There is a built-in refrigerator in the front cab wall and a built-in hot plate in the rear wall. Cab heating involves a forced air system with filtering and make-up fresh air. The locomotive nose has an enclosed toilet and full-height clothes locker. ■

M/W efficiency on Union Pacific

By MERWIN H. DICK
Engineering Editor

What makes for a successful maintenance-of-way operation on a large railroad with a traffic load that is extremely heavy and continuing to grow?

R.M. Brown, chief engineer of Union Pacific, has answers which sound deceptively simple. They came out in a recent interview that covered a wide range of questions intended to develop the thinking that has led to unusual progress in maintenance-of-way practices of this large western carrier.

"I certainly don't contend," says Brown, "that we on the Union Pacific are super railroad maintenance experts, nor do we have any mystic maintenance practices that insure perpetuation of a well-maintained property. I attribute much of our success to those who have gone before us, not only in the engineering and maintenance-of-way operations, but also to the philosophy of the top management and their judicious fiscal policies throughout the years.

"Because of our predecessors and their policies, all we have to do now is perpetuate the well-maintained property that they turned over to us. This is a much easier chore than to attempt to maintain a railroad to hold up under today's traffic loads that was not in acceptable condition to start with. Under such deteriorated conditions, you spend 50 cents out of every maintenance-of-way dollar merely stomping out fires to keep the railroad in operation instead of improving the condition of the property to handle the present and future traffic requirements."

● **Yardsticks of efficiency.** What yardsticks does Brown use in measuring the success of a maintenance policy? His answer: "I think the best way to measure this success is to compare the end result, which is the quality of the track and roadbed structure, with the cost of maintaining it in that condition, based upon the tonnage of traffic handled over the track and the speed at which this traffic is run.

"If you don't run any trains over a piece of track, it doesn't cost much to perpetuate a certain level of maintenance for that track. By the same token, if you run a million tons of traffic over a piece of track at 70-mph speeds, it is going to require more maintenance effort than if you run a million tons over the same track at 50 mph."

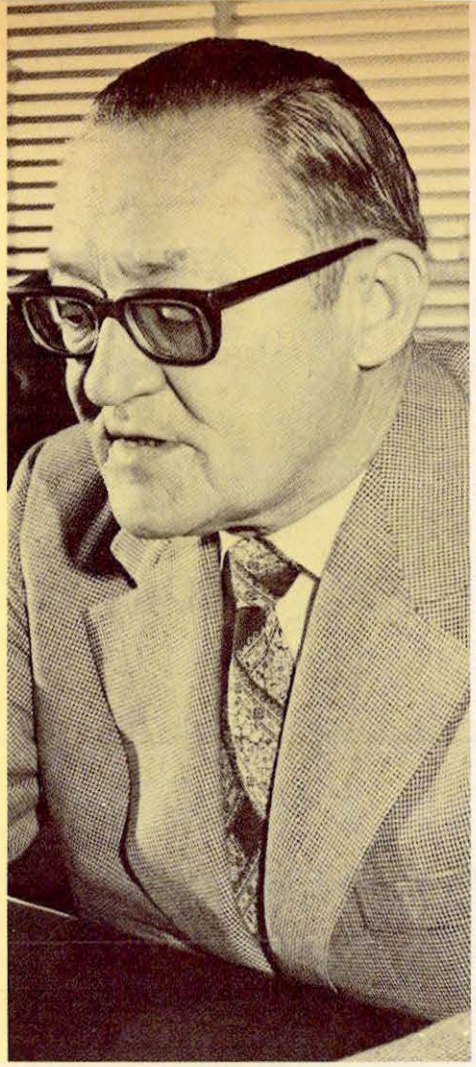
Brown had already brought out in the interview that segments of the eastbound main line in the 670-mile territory between Granger, Wyo., and Gibbon, Neb., carried 52 million tons last year, and that the UP's heaviest-traffic single-track main line carries about 40 million tons. "What's equally important from a maintenance standpoint," he says "is the fact that the permissible operating speed for freight trains is 70 mph in all of these territories."

The UP, says Brown, continues "to maintain as good track and roadbed structure as any road in the country, and a better one than most."

Then, explaining his yardstick for evaluating M/W performance on a year-to-year basis, he said he maintains charts in his office dating back to 1958, which are updated each year "to compare our maintenance-of-way operating expenses with those of six other major railroads which have comparable traffic volumes,

"I think the best way to measure this success is to compare the end result, which is the quality of the track and roadbed structure, with the cost of maintaining it in that condition, based upon the tonnage of traffic handled over the track and the speed at which this traffic is run.

—R.M. Brown, Chief Engineer, UP



RELEASED RAIL is taken up from the main line in bolted strings and transported directly to branch lines where it is relayed as it is taken off the cars.

and what's behind it

operating conditions, and so forth. Based upon the unit cost per million gross ton-miles of revenue freight handled, we run consistently lower each year than any of these other roads.

"Our average maintenance-of-way cost over the past five years runs around $1,650 per million gross ton-miles while the average cost on the other roads runs from about $1,735 to $2,350 per million gross ton-miles of traffic handled. Our maintenance-of-way operating ratio is also consistently lower than these other roads. Over the five-year period, our average maintenance-of-way operating ratio was around 11.7%, and the other roads ran an average from 12.2% to 15%. From an engineering and maintenance standpoint, I place more weight upon the cost per million gross ton-miles of traffic handled, as this is what wears out a track structure and dictates the maintenance."

● **Cautious mechanization.** Getting around to specific features of the UP's M/W operations, Brown indicated he has definite ideas regarding the value—and limitations—of mechanized equipment. "Without the equipment we have in our fleet today," he says, "our maintenance costs in all departments would be at least double what they are today. We continue to update our fleet each year with the latest generation of equipment available, but we are being cautious at the same time to insure that we don't get 'over-mechanized' with a lot of expensive equipment that won't fully contribute to our efforts to maintain a first-class property at the lowest possible cost.

"I can assure you that equipment in itself is not the sole answer to the maintenance prayer, and if it's overdone it can be more of a liability than an asset in maintaining a good track and roadbed structure at a reasonable cost. These large, expensive machines are ideal for heavy program work, such as out-of-face tie-gang operations and out-of-face surfacing and lining operations, but they have definite limitations in their use in performing the day-to-day track-maintenance work that must be done between these periods of out-of-face program work.

"With the volume of traffic we have over most of our main lines, it has been our experience that, whenever we try to use these large on-track machines to perform the day-to-day spotting and lining work, both the machines and the men assigned to work with them spend most of the day sitting on a side track watching the trains go by."

The matter of day-to-day track maintenance has, for this reason, received considerable thought on the UP. Says Brown: "In my opinion, the quality of day-to-day track-maintenance work that is done between the periods of out-of-face heavy program work has more to do to insure the best track conditions at the lowest over-all cost than any other single factor. Over the past 15 years we have tried a half dozen schemes of 'cycling' or 'mechanizing' this so-called day-to-day maintenance. In each instance our track went to pot and our costs went up to bring it back to acceptable standards. We finally decided that instead of going in cycles we were going in circles and abandoned each of these schemes."

● **Section gangs a key factor.** The policy that the UP has adopted for performing day-to-day maintenance was described by Brown: "We have section gangs assigned over our entire railroad to do the day-to-day maintenance work. In certain of our heavy-traffic territories we supplement these section gangs with a small track-maintenance gang consisting of a foreman and five to eight men who are housed in outfit cars and move from one point to another as required on a roadmaster's district.

"The force consist of the section gangs and the territory assigned to them vary considerably and are determined by the volume of traffic over the particular segment of line, the physical characteristics of the segment of line, and the difficulties experienced in maintaining the track to our standards. In main-line territories, these section gangs will consist of a foreman and three or four men and will have an average of from 20 to 24 miles of main line assigned to them. On branch lines, the sections will consist of a foreman and two men, and will have an average of 30 to 50 miles of track assigned to them.

"The section foremen are made responsible for the proper inspection and maintenance of all of the trackage assigned to them, and, for the most part, assume this responsibility very well. They are also responsible for maintenance of the road crossings, right-of-way fences, keeping culverts and other drainage structures clear of obstructions, and so forth. Most of these foremen develop a deep sense of responsibility and take pride in the territory assigned to them. I believe this contributes a great deal to our success in track maintenance."

Are the section gangs mechanized? Brown says the gangs have power tools assigned to them on a regular basis, but

"We finally decided that instead of going in cycles we

not any of the large machines. The machines they use (such as track liners, spot tampers, switch tampers and jack tampers) are assigned on a division basis and are rotated from one roadmaster's district to another, and from one section to another as dictated by track conditions.

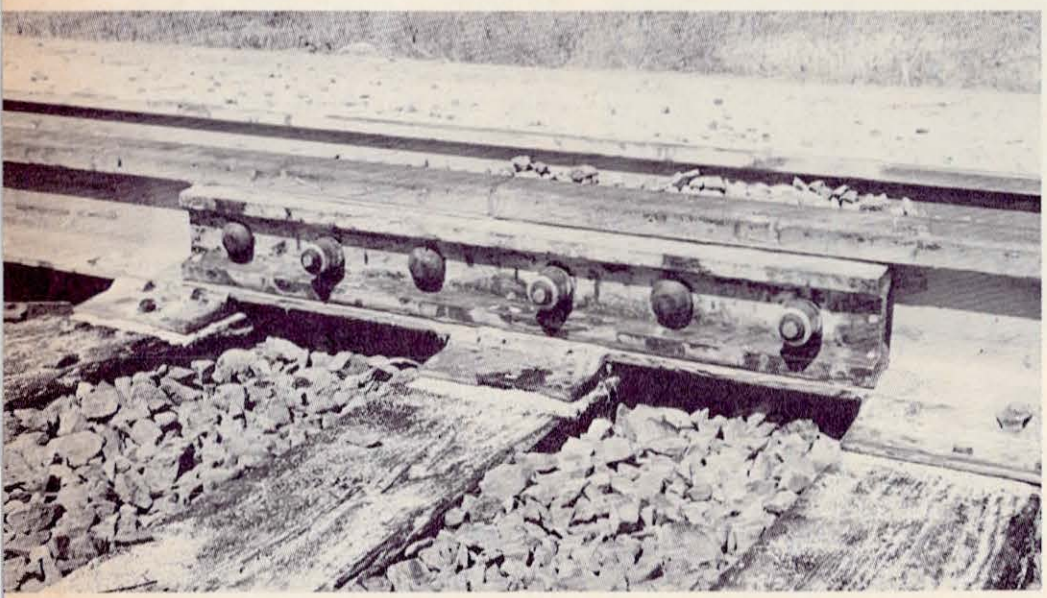
● **No set cycles.** In programming its heavy out-of-face track operations, UP "violates" the cycle maintenance theory, says Brown. "We don't have any set period of time to run a tie gang over a particular territory," he explains. "The section forces mark the bad ties within their territories as they work on their track during the year, and the number of ties marked in each area is tabulated before we establish our annual tie-gang program. From these numbers we then prepare a tentative program for the following year and have track supervisors walk each of the territories under consideration to verify that the ties marked by the section foremen are actually bad enough to change out.

"This is an important check to make, in my opinion, as every foreman has his own personal opinion of what constitutes a bad tie, and we feel it is essential to have these rechecked by someone in a supervisory capacity. After these tentative tie-gang territories have been verified or modified by the supervisors, we then prepare our final program upon the basis of their recommendations."

As for out-of-face track-surfacing work, Brown notes, "we determine our program strictly in accordance with the track conditions as they exist, and without any regard to any time cycle."

He explains that this year's surfacing and lining program is being revised considerably from the program that was made up last fall.

"This is due," Brown says, "to the severe weather conditions we have experienced in certain of our territories this winter and spring. We had very severe weather in eastern Idaho, Wyoming and parts of Utah and Nebraska this winter, with temperatures getting as low as 53 degrees below zero, which raised havoc with much of our track. As nearly as we can tell, we installed more than a half-million shims in our track during the winter, and with the late, wet spring we have had, we have a lot more rough track now than we usually do."



UNION PACIFIC now has about 500 miles of rail in track in which all the insulated joints and conventional joints between strings are glued.

"Because of this we are now revising our out-of-face surfacing and lining program to include the worst of these territories. It now appears that we will end up with about 1,800 miles in our out-of-face surfacing and lining program this year."

● **Getting on-track time.** In common with other railroads, the UP M/W department is having a problem getting adequate on-track time for its mechanized track gangs engaged in out-of-face work. "This is one of the most difficult problems we have had in getting any production out of rail-relay gangs, tie gangs and surfacing and lining gangs," Brown says "We had many occasions during the working season last year when these large, expensive gangs got only two to three hours productive time on-track during the eight-hour day. This is something, however, that we in the maintenance department must contend with as freight-train schedules are now as fast, as tight and as closely-adhered-to as streamliner passenger trains were in years past.

"The only solution to the problem is to maintain close communication with operating department people to get just as much time on the track as possible, and to have your gangs properly equipped and properly organized to accomplish the maximum amount of work in the short periods of time that they have on the track.

"Taking our rail-relay gang as an example, we have laid as much as 18 strings of rail per day in double-track territory with a reasonable amount of time on track. In single-track territories we can lay up to 14 strings per day. In setting up our rail-laying schedules for the year, however, we base this upon an average of 11 strings per day for the entire season, which includes the time consumed in moving from job to job. Maintaining this schedule requires very close cooperation between the maintenance and operating people on the ground to give the gang just as much time on the track as possible."

One way of implementing the interdepartmental cooperation, says Brown, is to have a representative of the operating department on the job. "In most of the heavy traffic territories where we work these heavy program gangs, the operating department has a transportation officer working with them at all times," he explains. "These people contribute just as much to the productivity of the gangs as the maintenance-department supervisors directing the operation of the gangs.

"Most of these transportation officers take a very deep interest in the operations, and their interest certainly reflects upon the amount of time the gangs get on the track. In fact, we have one trainmaster in particular who has taken so much interest in our rail gang that he can now operate any of the machines assigned with the gang. When performing work in his territory, we are certainly assured of getting the maximum amount of time available on the track."

● **Establishing CWR policy.** Union Pacific is a relative newcomer in the use of continuous welded rail, having adopted the out-of-face use of such rail in 1969. When laying CWR in extremes of temperature, the road has firm rules governing the heating or cooling of the long strings. "That is one advantage in being late in the game of using continuous welded rail, as we were fully aware of all the problems involved with the expansion and contraction of the rail under extreme temperature changes," says Brown. "We first spent almost a year

were going in circles."

measuring ambient and rail temperatures over our entire system so that we could determine the best temperature at which to spike and anchor CWR in any particular territory. This is particularly important when you operate through territories such as we do where the ambient temperatures at the 6,000-foot to 8,000-foot elevations will range from 50 degrees below zero to 110 degrees above zero, and desert territories where the temperature will range from 10 degrees above zero to 130 degrees above zero."

Using rail cooling and heating equipment specially developed for the purpose, the UP, says Brown, "can now control the temperature of the rail to within two or three degrees of the desired temperature before we spike and anchor it in track. We now have somewhere in the neighborhood of 700 miles of CWR in track over the entire system and have not as yet had a pullapart or a sun kink under extreme temperature conditions. We have had some problems with broken joint bars at isolated points, but have never sheared the bolts out of a joint, which constitutes a true pullapart."

● **Vibration the answer.** When UP first started laying CWR under controlled-temperature conditions in 1969, the road found that the rail, in response to being heated or cooled, was not expanding or contracting as much as it should at the ends of the strings. "We concluded," says Brown, "that this was due to the frictional resistance of the rail in attempting to move in the tie plates. Tests confirmed that this was the problem and we found that by vibrating the rail at the same time that it was being heated or cooled we would overcome this resistance and permit the rail to expand or contract the desired amount at the end of the string. We have since developed and constructed our own rail-vibrating machines and these have worked very effectively.

"It is our conviction that the only reliable way to avoid sun kinks and pull-aparts is to get the rail to a predetermined temperature and relieve all internal stresses before spiking and anchoring it in track, and we think the heating, cooling and vibrating procedures we have adopted provide the best way of doing this."

● **Pioneer in gluing joints.** Another area in which Union Pacific has done pioneering work is in the use of glued or bonded insulated and closure joints between CWR strings. "We now have somewhere around 500 miles of rail in track with all of the conventional and insulated joints glued," says Brown. "Surprisingly, these joints are holding up remarkably well. Even with the extreme cold temperatures last winter we had very few joints where the glue bond failed. None of these pulled apart; they just opened up to the extent that the bolts would let them."

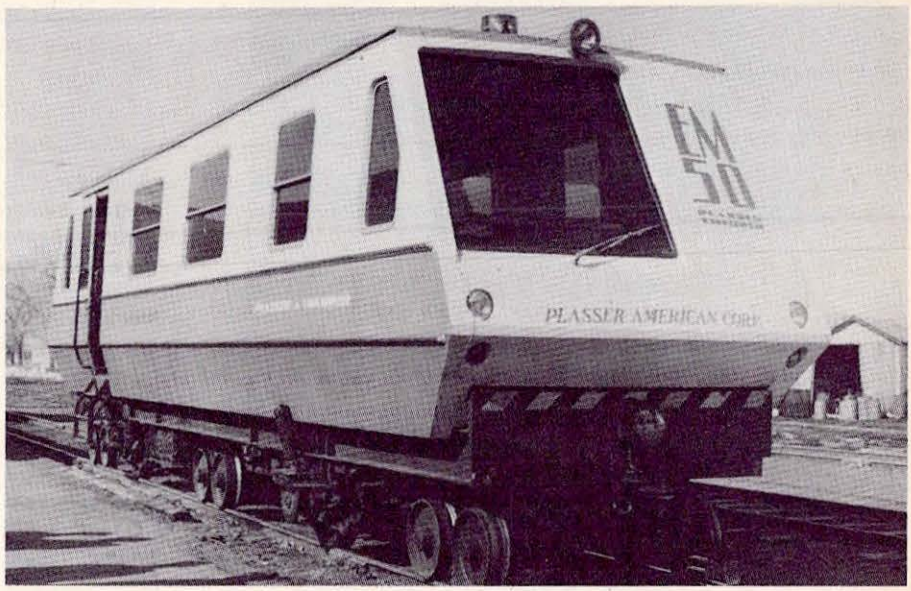
Another respect in which rail practices on UP deviate from those in use on most railroads is in the policy of taking up released rail from the main line in bolted strings and transporting it directly to branch lines for laying. Explaining the reasoning behind this policy, Brown puts it this way:

"We feel that this is the cheapest way to release the rail from main-line relays and get it laid in branch-line tracks. Many roads are taking this rail into their plants, cropping it, welding it and then taking it back out on branch lines for relay. For the most part, however, the traffic over the branch lines where we are laying these bolted strings is not heavy enough to justify the cost of cropping and welding the rail along with the extra cost of handling it. It would also be necessary to place considerable additional ballast on most of our branch lines merely to hold continuous welded rail in the track and we don't think it is worth the cost."

● **"Important new tool."** The fact that Brown has definite ideas about the use and functions of track-recorder cars came out in the interview. He feels that such cars are an important new tool for monitoring track conditions and assisting in programming out-of-face work such as surfacing, lining and tie renewals. Noting that the road has been operating the Plasser American recorder car across its entire property, Brown says that what he is looking for is a "track-recording car that can operate under its own power much the same as a rail-detector car and that can monitor track under any weather conditions and with little electronic sophistication.

"By having a self-propelled car, I think we can monitor our track conditions over the entire system much faster and more effectively than with a car that must be run as part of a freight train.

"We are soon going to have the DOT test car on a test run over a segment of our property and I propose to operate the lighter Plasser car over this same track at the same time and compare the track charts. I am confident they will reflect the same track conditions. What I hope to be able to purchase for use on our road within the next year or so is a self-propelled car that will weigh 40 to 50 tons and be capable of testing track, including road crossings and switches, in all kinds of weather, at a testing speed of 35 to 45 mph, with a purchase price of less than $350,000."



TRACK-RECORDER CARS, says Chief Engineer Brown, are an important new tool for monitoring track conditions and assisting in programming track work.

The attitude of Chief Engineer Brown and his staff as they deal with the responsibilities is wrapped up in these sentences: "Our basic objective is to maintain a suitable track and roadbed structure to handle the ever-increasing demands of our traffic requirements—and to do this at the lowest possible cost. This is no small chore, as these demands are increasing daily with heavier volumes of traffic, faster operating speeds, and the increasing predominance of the larger, heavier cars in the train consists." ■

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LETTERS

"What the MTA is all about"

New York

To the Editor:

We were all very pleased with the excellent job done by Railway Age on the five year round-up of the Metropolitan Transportation Authority (RA, April 9, p.16). Without any question, it is the best and most incisive summary of what the MTA is all about and what it has thus far accomplished. Our thanks to you and you and your very competent associates for doing a superb job with a very complex subject.

William J. Ronan
Chairman
Metropolitan Transportation Authority

D&H sesquicentennial

Albany, N.Y

To the Editor:

Your article on the Delaware & Hudson [RA, May 30, p.14] is terrific. Thanks.

Carl B. Sterzing Jr.
President
Delaware & Hudson

Albany, N.Y.

To the Editor:

I would like to express my appreciation for the excellent coverage you gave Delaware & Hudson in your magazine. Our sesquicentennial celebration would not be the success that it is without the coverage and cooperation we received from your fine organization.

Thomas E. O'Brien
Assistant Vice President, D&H
(Chairman, Sesquicentennial Committee)

"Let's keep our rights-of-way"

New Haven, Conn.

To the Editor:

May I add my congratulations to many you must have already received for your fine editorial in the March 12 issue of Railway Age [p. 54] entitled "Let's Keep our Rights-of-Way."

Coming as it does at the end of this issue which contains the remarks of Senators Weicker and Hartke, both of whom, in my opinion, know little of what they are talking about, and following also the article about "What can be done about M/W's biggest problems" it's quite obvious that selling the rights-of-way to the Federal government is not going to solve any problems for the railroads. The Federal government would not only have to assume all of the maintenance of way, labor, and all of the functions of the AREA but also once the railways have sold their property rights, they will be like every other tenant looking to the landlord to keep the property in shape.

This certainly does not seem to be the way to run a railroad.

Harry F. Brown
Consulting Engineer

For the record

Portland, Maine

To the Editor:

Reference is made to an article on page 14 of the March 12 issue of Railway Age. The statement is made, "Frederic C. Dumaine, president of Amoskeag Co., parent of the Bangor & Aroostook and Maine Central. . ."

I would like to bring your attention to the fact that Amoskeag Co. is not the parent of Maine Central in any

form. Although Amoskeag owns approximately 26% of Maine Central's common stock, it is non-voting stock held in trust by Irving Trust Company.

As you may well be aware, Mr. Dumaine unsuccessfully attempted to acquire control of Maine Central. The attempt was made through seeking ICC permission to vote the stock himself and to acquire additional stock. He subsequently withdrew this petition, and the matter has not been reopened since.

Bradley L. Peters
Director of Public Relations
Maine Central Railroad

Florida transit

Tallahassee, Fla.

To the Editor:

I appreciate your interest in our transit improvement program for the Central Florida corridor area and I want to compliment Railway Age for the comprehensive coverage of the Orlando conference in the Feb. 12, 1973, issue. We believe we were able to give even greater momentum to our action program during our conference in Tampa on March 12.

Walter L. Revell
Secretary
Florida Department of Transportation

Car supply—and Russian grain

Kansas City, Mo.

To the Editor:

We have read with interest the April 30 issue of Railway Age, especially the articles concerning car supply. On page 28 of this issue, you stated in the beginning of the third full paragraph, "More than anything else, grain—specifically, grain for the Soviet Union—is at the heart of the current car shortage problem."

There is no doubt, whatsoever, that the record exports of grain plus the added amounts of grain going to Russia over and above the record exports have put a tremendous burden on the nation's carriers in supplying the cars to move these goods. As to singling out the grain for Russia as the heart of the current car shortage problem, we and many others seriously question this.

There was a period of four months during which negotiations were going on as to what type bottoms to use to move this grain to Russia, and also foot-dragging in the amount of subsidy to be paid to American bottoms for this move. It is thought by many people other than this organization that if this time loss had not happened, there would not have been the glut there is today or has been in the past few months in moving this grain to the ports for export.

Jon C. Hansen
Transportation Commissioner
The Board of Trade
Kansas City, Mo.

13 transit myths

San Jose, California

To the Editor:

Your article "13 Myths Holding Back Rail Transit" [RA, Nov.13, 1972, p.20] was very good—and makes a clear presentation of the advantage of rail transit. It is a story which must be told again and again, to counter the extensive barrage of lies propagated by the highway interests.

We believe that two of your points need refinement, however.

Statement No. 7 is regarding transit construction costs. The last paragraph of the clarification has nothing to do with that, however, but treats of increased real estate values along transit lines. The picture on page 23 also implies that you are

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The National Railways of Mexico hereby invite all manufacturers of COMPONENTS PARTS FOR BOX CARS to participate as bidders on this-kind of materials, that our company need to fulfill its work programs.

FINANCING FUNDS

The acquisition of these materials will be financed through a loan granted by the World Bank and therefore the bidding terms will be—those established by the Bank. Only suppliers of member countries-of the World Bank and Switzerland, are allowed to participate as—bidders.

BIDDING CONDITIONS

Companies interested in participating as biders are requested to apply directly to:

Direccion de Adquisiciones
Constructora Nacional de Carros de Ferrocarril, S.A.
Av. Universidad y Miguel Laurent 803, Primer Piso.
MEXICO 12, D.F.,

in order to obtain the bidding documents containing specifications, quantities of materials and all the information required to submit the offers.

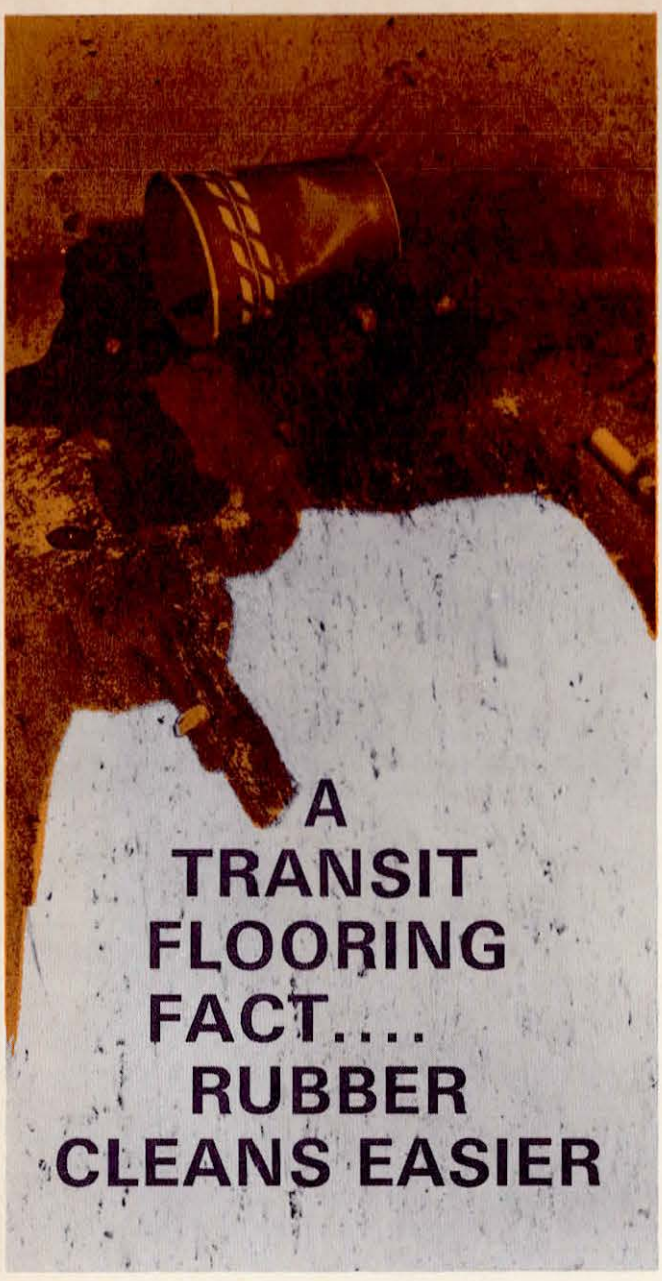
These especifications will be furnished on payment of $200.00, Mexican Currency.

PLACE AND DATE OF CONCOURSE

Limit date for the delivery of envelopes with quotations from the different bidders, will be as follows:
BIRF-301-A Component Parts for Box Cars. June 29, 1973.
at 10.00 A.M., at the above mentioned Acquisition Office quoted in the third paragraph of this Concourse, and the bidding will take-place at the Auditorium of the National Railways of Mexico, located on the 13th Floor, Wing B of the Administration Building, at Av. Central No. 140, Mexico 3, D.F.

NATIONAL RAILWAYS OF MEXICO

GENERAL MANAGER
LUIS GOMEZ Z.
Mexico City, May 10, 1973.



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dealing with someone who has said "transit does not help real estate values."

This whole discussion is irrelevant to *rail* transit, since real estate values are increased by *any* mode of improved transportation, be it rail, highway, air, or sea.

Conservationists fear the coming of highways, rail transit, or airports because they will cause development. Pointing this up as a specific trait of rail transit is a negative factor in your arguments. Land-use planning is absolutely essential in every area of the US—and is the only way of controlling and directing development.

Statement No. 13 implies that monorails and other forms of light transit are not "rail transit." This is caveman thinking. If "rail transit" must have two rails and look like trains, then you are representing only a small part of the transit picture. What about tri-rail? Mono-beam? Suspended track? Concrete guideway?

The significant point is that heavy rail transit will not come into full bloom without having feeder systems of "light transit" which, in most cases, have cars running on rails or suspended from rails.

It is a lot to expect of a person to drive to the station and leave his car parked there for a day—accumulating $3 to $4 in fixed charges plus two-bits parking fee. Heavy rail transit by itself will thus decrease car ownership and mileage by only a few per cent. Light transit is a necessary supplement. For the city/suburb commute run, *both* are indispensable for a livable future.

There must be a hierarchy of transit like there is of roads (freeways/primary/secondary).

Good light transit systems are available and should be installed rapidly. Development should continue on the more exotic systems, however.

John Lambert
President
The Modern Transit Society

Freight-car supply

Hutchison, Kan.

To the Editor:

The article by Gus Welty and Bob Bartley in the April 30 issue of Railway Age entitled "The big lesson of '73. . ." is, in my opinion, an excellent analysis of the car supply situation in which FAR-MAR-CO, the nation's largest grain cooperative, is involved.

This is a request for permission to reprint the article in our magazine, The Marketer, with a paid circulation of about 70,000 to our members in eight states. . .

Harold E. Wills
Director of Public Relations
FAR-MAR-CO, Inc.

Passenger service

Little Rock, Ark.

To the Editor:

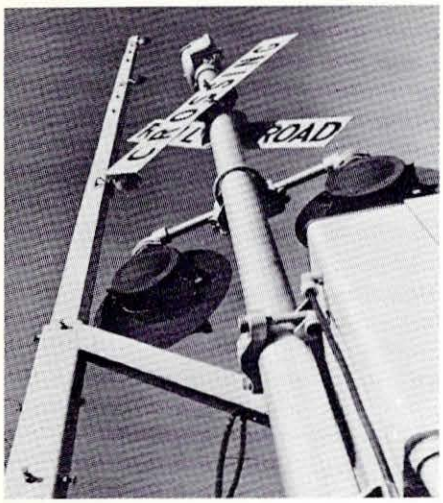
Your May 14, 1973 issue is the greatest yet and most encouraging. I am so glad to see that Railway Age has come around editorially on Amtrak. It is my hope that the 13 member railroads will soon begin to see the light of present day conditions, and stop living in the darkness of the past 30 years.

The time for war between railroads and passenger service is over. Their efforts are urgently needed so that we can again have "peace" in the form of a truly balanced transportation system, both freight and passenger in the United States.

Your continued reports on Amtrak are anticipated. Railway Age is the best in the trade and I look forward to each issue.

John A. Mills
Member
National Association of Railroad Passengers

New Products Report



Gate adapter kit cuts costs at crossings

The aluminum gate arm adapter assembly features a new aluminum telescopic grade crossing arm which, with its adapter, makes it possible to standardize all gate arms up to 32 ft in length with just two inventory items. Fabricated from warp-free rigid aluminum, the 30-lb., three-section telescopic arms adjust to cover spans from 16 to 32 ft long. With the appropriate adapter these gates can be used with mechanism style numbers 3564, 3566, 3567, 3568, 3570 and models "S" and "GS." Each adapter comes with all hardware necessary to convert gate mechanisms to Union Switch & Signal's standard aluminum gate arms. Both gate arms and their adapters comply with AAR regulations and all state requirements.

Equipped with an aluminum shear pin which breaks under impact, the gates suffer minimum damage from vehicle "run through."

Three weatherproof lights mounted on the arm are plug-connected to both the main cable and arm, providing the necessary breakaway feature so that when the arm is sheared off, no damage occurs to the cable or the existing mechanism. Gates may be ordered with alternate reflectorized stripes of red and silver or black and silver that provide excellent visibility and virtually eliminate the need for painting.

Circle 60 on reader service card

Anti-graffiti coating will last 15 years

An anti-graffiti product developed in England is being introduced to this country by Flair Products, Inc. The product, called Ceramicoat, can be applied to all forms of masonry, metal and wood by brush or spray. It provides a tough, abrasive-proof film with appearance and hardness like glazed tiles. Ceramicoat, which costs less than 4 cents per foot, will last for 15 years. It offers resistance to spray paint and marking-pen graffiti. Markings cannot adhere permanently to a Ceramicoat surface.

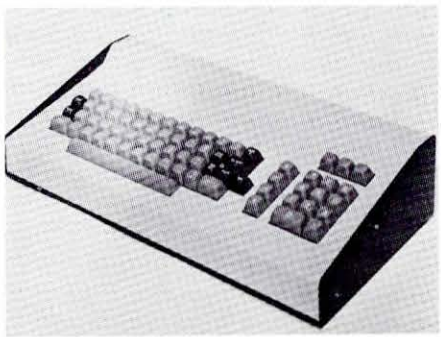
Circle 61 on reader service card

Optical reader permits data entry by typewriter

The Datatype Optical Reader permits data entry via an IBM Selectric typewriter, utilizing a special print element which "types" the normal "people readable" alphanumeric characters along with a "machine readable" bar code to activate the scanner.

The system incorporates a two-way communications module in the logic. This allows the scanner to operate remotely, under control of the receiving controller or computer. Features of this communications module include: Automatic call-up; start and stop transmission; and activation of a re-scan cycle when transmitting errors are detected. The DFR Reader incorporates a parity check-bit which virtually eliminates character substitution possibilities. Direct "plug-in" to most computer communication channels also by-passes the need for expensive interfaces. The system will operate over voice grade lines.

Circle 62 on reader service card



ASCII keyboard is ASR33 compatible

A new free-standing alphanumeric keyboard is designated the series KB200. Model KB200A provides a 53-key ASR33-compatible alphanumeric keyboard arrangement and generates 7-bit-parallel ASCII output at TTL logic levels. Model KB 200B is identical, except that separate cursor, numeric, and function key pads are also provided.

All models are plug-compatible with

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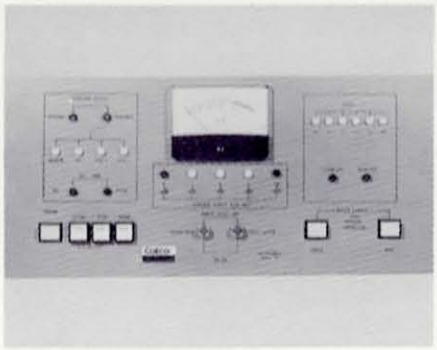
6/11/73

Ann Arbor Terminals series 200 display controllers, but are suitable for use with any data communication terminal or station requiring parallel output with up to 3 TTL loads of drive.

Circle 63 on reader service card



Unit connects radio with telephones

The Coeco auto-patch model AP-1 provides a mobile radio unit automatic access to telephone service through the mobile unit's base station radio equipment. An individual with a two-way mobile radio unit may initiate or receive telephone calls through his radio repeater or base station. Additionally, the mobile unit will require a handset with 12 pushbuttons, as well as a tone pad unit to provide tone signaling. The auto-patch model AP-1 will operate with telephone company interface if required, or without interface if not required.

Circle 64 on reader service card

Uninterruptible ac power source is protected against overloads

Wilmore Electronics' model 1202 uninterruptible power source (UPS) ensures absolute continuity of frequency-stable 60-Hz 115-volt ac sine wave voltage to critical loads despite temporary interruptions of commercial ac power. Continuity of well-regulated sinusoidal voltage to the load is automatically ensured because, even when normal commercial ac power is present, the UPS output is derived from its internal inverter. When commercial power fails, there is no switch-over interval and, therefore, no transient evidence in the ac output voltage. When commercial power returns, the built-in battery charger—specially designed to enhance the intrinsic long-life characteristics of the sealed maintenance-free gelled-electrolyte batteries—restores the batteries to full charge.

Model 1202, with commercial ac power present, is designed to supply an output of 250 volt-amperes continuously and will continue to supply 250 volt-amperes for a least 20 minutes when no ac input is present. Longer backup time can be obtained through use of additional batteries connected externally to the UPS through a rear panel connector. UPS is well protected against overloads, short circuits and most user errors. It is 7 in. high by 19 in. wide by 19 in deep, weighs about 90 pounds, and mounts in a standard 19-in. rack. The price is $975 in small quantities.

Circle 65 on reader service card

Seamless polyurethane flooring is easy to install, maintain

Ultradec seamless floors offer special advantages for particular application in cabooses, work cars and other railroad crew areas. The Ultradec polyurethane floor system, a product of Phelan-Faust Paint Manufacturing Co., can be placed over any suitable substrate. Impervious to mild acids, alkalies and stains, it effectively seals the substrate from seepage of oil, kerosene or similar materials. It is also bactericidal and will not support fungus or mildew. It is easily installed; maintenance is minimal, because waxing is not necessary to preserve the floor's appearance.

Circle 66 on reader service card

NEW LITERATURE

TANK CAR TERMS. Nearly 250 railroad tank car terms are defined and explained in "Tank Car Terminology," a 16-page booklet issued by Union Tank Car Co. Among terms defined are bolster snubber, steam jacketed nozzle, eduction-induction pipe, fixed tube gauging device and shell outage.

Circle 70 on reader service card

HAND BRAKE. A color brochure from MacLean-Fogg Lock Nut Co. describes a new high-reliability vertical wheel hand brake introduced by the firm's Railway Products Division. The brake is designed for use on all cars up to and including 100-ton capacity. This includes cars with conventional or truck-mounted rigging, using either high-friction composition shoes or metal shoes under existing design considerations.

Circle 71 on reader service card

MAINTENANCE MACHINERY. Nordberg's new One Man Scarifier-Inserter (OMSI) is described in a bulletin released by Rexnord, Nordberg Machinery Group. OMSI selects ties, scarifies bed and inserts ties square with rails, ready for plating and spiking, in one operation; it can place up to 200 ties per hour.

Circle 72 on reader service card

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People in the News

ATLANTA & WEST POINT–WESTERN OF ALABAMA–GEORGIA.–R.E. Thompson appointed traffic manager-rates and divisions, Atlanta, Ga.

BESSEMER & LAKE ERIE.–Darrell E. Stanyard appointed pricing analyst-general commodities, Pittsburgh. **Michael T. Reilly** named pricing analyst-coal and ore, Pittsburgh.

BURLINGTON NORTHERN.–C.E. Larson, vice president, pricing, named to the newly created position of vice president, western region, San Francisco. **J.H. Hertog,** regional vice president, Seattle, appointed vice president, market development, St. Paul. Mr. Hertog's successor is **R.A. Beulke,** regional vice president, Omaha, who in turn is succeeded by **R.L. Merklin,** vice president, market development, St. Paul. **W.C. Hageman,** assistant vice president and regional sales manager, San Francisco, named senior assistant vice president, market development, St. Paul. **O.W. Cobb,** assistant vice president, pricing, becomes senior assistant vice president, pricing.

CANADIAN NATIONAL.–John Wilson, manager of freight pricing, Montreal appointed general manager, international services.

ERIE LACKAWANNA.–R.C. Clark, assistant to the president, Cleveland, named secretary.

ILLINOIS TERMINAL.–R.L. Basin, assistant chief mechanical officer, Alton, Ill., promoted to chief mechanical officer, succeeding **R.C. Barnhart,** who retired June 1.

MILWAUKEE.–Nicholas M. Derrough named assistant manager of training and development, Chicago. He was formerly training coordinator, management and organizational development division, **State of Illinois Department of Personnel.**

NATIONAL OF MEXICO.–Luis Gomez Z. appointed general manager, succeeding **Victor Manuel Villasenor. Ramiro E. Martinez** named assessor to general manager's office.

Assistant managers appointed: **J. Sanchez Curiel,** administration; **L. Alegria de G.,** operation; **P.C. Garcia Trevino,** finance; **E.A. Cota,** traffic; **A. Cervantes D.,** organization and planning; **Roberto Mendez S.,** motive power and rolling stock; **Guillermo Ruiz H.,** purchases; **Mario Torres Jacobi,** track and structures; and **Julio Vargas Zepeda,** chief clerk.

A. Cochegrus U. de Quintana appointed chief, freight traffic department. **F. Saucedo G.** and **J. Stuart G.** named assistant to chief, freight traffic department.

J.I. Andrade M. is general superintendent of transportation, and **A.R. Cuenca,** superintendent electricity and telegraph service. **S. Aguliera A.** appointed superintendent motive power and rolling stock, **G. Rodriguez McNiece,** chief engineer, and **C. Calva C.,** superintendent of car service.

A. Gonzalez A. named comptroller, **R. Rangel L.,** treasurer, and **C. Ascencio Vega,** auditor of freight receipts.

J. Soci C., chief, accounting department; **E. Santiago E.,** auditor of disbursements; **M. Carballo S.,** auditor passenger accounts; **M. Briones G.,** auditor of agents and conductors accounts; **M. Duran Castanedo,** freight claim agent; and **C. Nevarez A.,** general superintendent, express department, remain in those positions.

NORFOLK & WESTERN.–Richard F. Dunlap, vice president of operations, and **James E. Carr,** vice president-sales, promoted to senior vice presidents-operations and sales, respectively, Roanoke, Va.

James T. Cutcliff, assistant vice president-international commerce, Norfolk, promoted to assistant vice president-sales. **Aubrey T. Mason,** assistant vice president-staff, succeeds Mr. Cutcliff. **G.P. Hunter, Jr.,** manager of special projects-sales, named assistant vice president-staff.

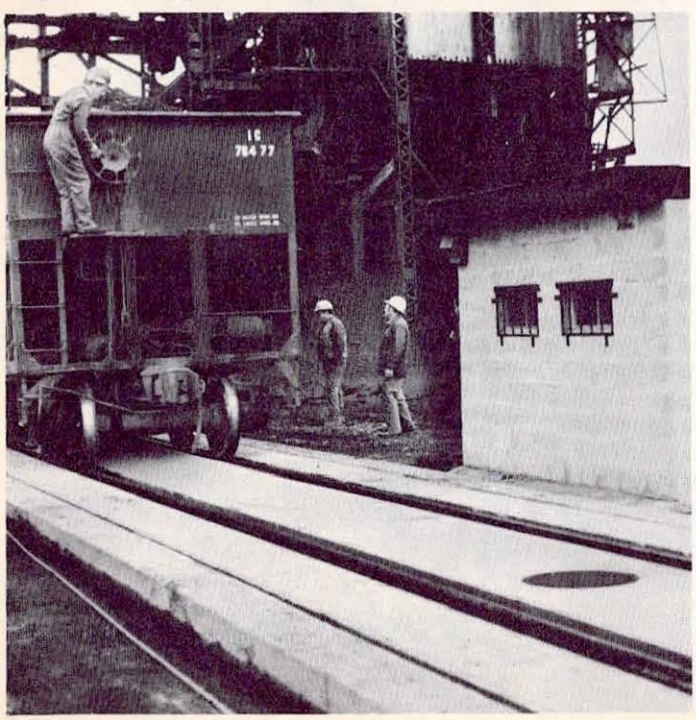
James G. Rowe appointed manager-tariff publications, Roanoke.

PENN CENTRAL.–Walter E. Keefer, supervisor-electrical equipment, appointed regional mechanical supervisor-car, Metropolitan Region, New York.

ST. LOUIS SOUTHWESTERN.–C.B. Buck appointed general freight agent, Tyler, Tex.

SOUTHERN PACIFIC.–Alden W. Kilborn,

scales



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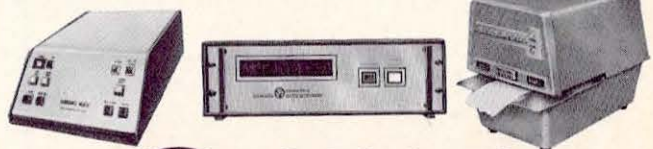

Colt Industries
Fairbanks Morse
Weighing Division

St. Johnsbury, Vermont 05819

Circle 39 on coupon page 67

superintendent, Oregon division, Portland, promoted to the newly created position of assistant to the vice president there. Mr. Kilborn successor is **Charles T. Babers,** assistant superintendent, Oregon division, Portland, who in turn is succeeded by **William F. Currier,** transferred from Klamath Falls, Ore. **H.D. Fisher,** trainmaster, Portland, succeeds Mr. Currier.

Henry K. Koberstein, projects engineer, Portland, retired recently after 37 years' service.

Jack Roche, assistant district traffic representative, Ogden, Utah, retired recently after more than 45 years of service.

Robert W. King, assistant general manager public relations, San Francisco, promoted to general manager public relations.

WESTERN RAILROAD ASSN.—**Joseph D. Feeney,** general solicitor, appointed general counsel, Chicago, succeeding **Ed White,** who retired May 31.

TRANSIT

C. Carroll Carter has been appointed a special assistant to **Claude S. Brinegar,** Secretary of Transportation, Washington, D.C. Mr. Carter joined the Department of Transportation in 1969 as assistant administrator for public affairs, Urban Mass Transportation Administration.

In a revision of the management structure of the **Cleveland Transit System** several positions have been combined. **David W. Davis,** personnel director, becomes manager of operations and personnel director. **Robert Siegman** appointed superintendent of purchasing and accounting. **Salvatore Felice,** superintendent of purchasing, appointed superintendent of schedules and research. **Arlene Butler,** director of public relations, in addition assumes supervision of the Charter Service Division.

Richard B. Griffin, Jr.
P-S

Stephen J. Murphy
MacLean-Fogg

Jerry C. Coffey has joined the management staff of **BRH Mobility Services Co.,** Houston-based transportation planners and engineers. Mr. Coffey will be responsible for client relations dealing with TRANS-ADE analyses, a BRH-developed library of computer programs for use in transit system analysis, design and evaluation.

William A. Bugge, project director, **Bay Area Rapid Transit District,** retired Apr. 30. Mr. Bugge, who will continue as a consultant to **Parsons Brinckerhoff-Tudor-Bechtel,** will be succeeded by **Richard A. Ashby,** assistant project director.

Robert J. Landgraf has been promoted from chief engineer to director, **Department of Transportation, City of Shaker Heights, Ohio.** Mr. Landgraf will be in complete charge of operation and maintenance of the Shaker Heights rapid transit light rail system. He succeeds **Paul K. Jones,** who retired as Mayor and director of transportation.

Harry L. Parrish, Jr., executive director, **Denver (Colo.) Regional Transportation District,** resigned on May 1.

SUPPLY TRADE

Richard B. Griffin, Jr. has been appointed assistant to the president, **Pullman-Standard Division** of **Pullman Incorporated,** Washington, D.C. He was formerly special assistant to Under Secretary James M. Beggs, **U.S. Dept. of Transportation.**

Stephen J. Murphy, general manager of railroad sales, **MacLean-Fogg Lock Nut Co.,** Chicago has been appointed vice president in charge of railroad sales. **Marvin E. Anderson** has been named manager of railroad engineering.

OBITUARY

Robert E. Brooks, 88, retired in 1951 as general manager, **Butte, Anaconda & Pacific,** died May 14 in Laguna Hills, Cal.

URBAN AND INTERURBAN TRANSPORTATION EQUIPMENT FORECAST

New 300 page Frost & Sullivan report is designed to help qualified firms capture a share of the $8.5 billion expected to be spent, during the 1973 to 1980 period, for innovative and traditional equipment.

The report forecasts sales through 1980 for intercity rail and bus systems, urban rail and bus systems, demand transit systems, taxicabs, and computer transit systems; discusses the requirements for train station facilities, associated electronics and controls, power and advanced research and development; and discusses foreign products, the impact on freight operations, and costs to upgrade for new vehicle designs.

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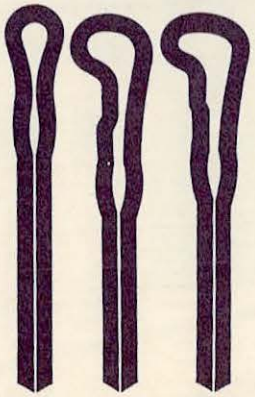

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Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended May 19 totaled 552,462 cars, according to the Association of American Railroads. This was an increase of 5,713 cars, or 1.0%, compared with the previous week, and an increase of 26,789 cars, or 5.1%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended May 19 are estimated at 16.9 billion (the 1973 high), an increase of 8.4% above the corresponding week of 1972.

REVENUE FREIGHT CARLOADINGS

Commodity	May 19 week	May 12 week
Grain	30,750	31,411
Farm products	10,617	9,932
Metallic ores	41,276	45,185
Coal	93,547	92,121
Crushed stone, gravel & sand	33,036	31,129
Nonmetallic minerals	16,091	16,620
Grain mill products	19,722	20,059
Food and kindred products	22,140	21,672
Primary forest products	25,668	23,328
Lumber & wood products (except furniture)	17,621	17,990
Pulp, paper & allied products	23,065	22,664
Chemicals & allied products	31,665	30,472
Petroleum products	8,927	9,134
Stone, clay & glass products	23,429	22,685
Coke	8,652	8,493
Metals & products	27,387	27,538
Motor vehicles & equipment	29,129	28,749
Waste & scrap materials	16,728	16,821
Forwarder & shipper assn. traffic	10,034	10,266
All other carloads	62,341	60,108
LCL traffic	627	497
Total cars loaded	**552,462**	**546,874**
Cumulative total, 20 weeks	1973	1972
	10,260,957	**9,742,916**
Estimated revenue ton-miles (billions) 20 weeks	317.9	294.1

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended May 12 totaled 29,003 cars (14.8% above the corresponding week last year) and 50,073 trailers or containers (up 20.5% from 1972). Cumulative volume for the first 19 weeks of 1973 is 546,356 cars (up 18.6% from last year) and 940,436 trailers or containers (up 22.0% from 1972).

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
May 7, 1973	5,079,704	77,894,380
May 7, 1972	4,463,767	68,473,734

● *Boston & Maine.*—Will acquire by lease from U.S. Railway Leasing Co. 700 50-foot box cars to be built by Southern Iron & Equipment Co. Unit cost will range from $17,000 to $20,000.

● *Burlington Northern.*—Ordered 200 100-ton, 4,000-cu-ft capacity open-top triple hopper cars from Greenville Steel Car.

● *Canadian National.*—Ordered 522 freight cars as part of its planned expansion of intermodal operations (RA, May 28, p. 72). Marine Industries will build 245 100-ton container flat cars costing $5.3 million; Hawker Siddeley Canada, 200 100-ton gondola cars ($4 million); National Steel Car, 77 70-ton piggyback flat cars ($2 million).

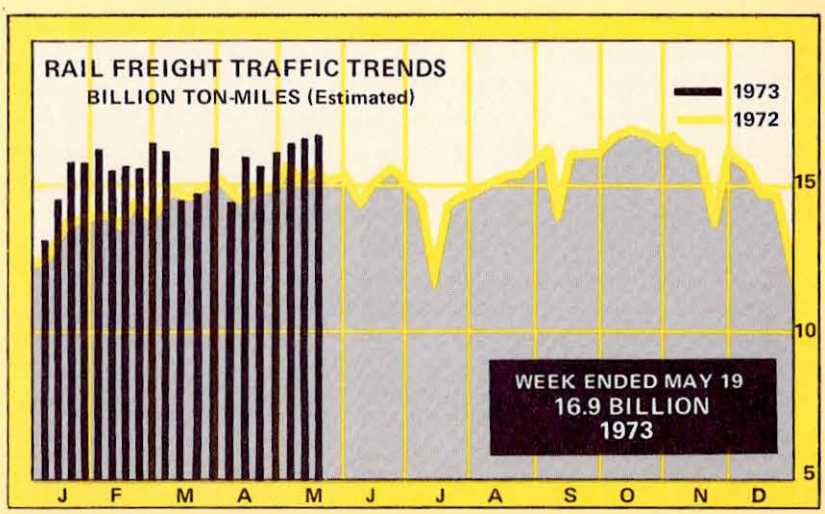
● *CP Rail.*—Is modifying 275 general service flat cars for container service at its Montreal Angus Shops. The cost exceeds $1 million.

● *Evans Products Co.*—Leased 100 70-ton all-door box cars from a division of U.S. Railway Manufacturing Co. The cars, designed and built by Evans subsidiary Southern Iron & Equipment Co., are the first all-door box cars to be leased by Evans.

● *North American Car (Canada) Ltd.*—Ordered 250 covered hopper cars from Hawker Siddeley Canada Ltd., at a cost of more than $5 million.

● *Toronto Transit Commission.*—Ordered 88 lightweight subway cars from Hawker Siddeley Canada at an approximate cost of $25.4 million. Delivery is scheduled to start in September 1974 at a rate of 6 cars per month. The cars will be similar in appearance to 76 cars supplied to TTC last year by Hawker Siddeley.

● *Trailer Train.*—Board approval has been received for the acquisition of 2,249 flat cars valued at $50 million. The new equipment includes 814 new automobile, truck tractor and auto body frame carriers; 700 piggyback cars; 100 container cars; 460 dual-purpose cars and 175 cars for hauling lumber and agricultural machinery. ACF, Bethlehem Steel and Pullman-Standard will build the cars.



Source: Association of American Railroads

Moving People

BART OPENS ITS CONCORD LINE

The Bay Area Rapid Transit System opened its third line—the Concord Line—on May 21. The line extends northeast from Oakland through East Oakland and the suburban communities of Orinda, Lafayette, Walnut and Pleasant Hill to Concord. Now, 58 miles of the 75-mile BART system are in service. The final BART segment, extending service via a transbay tube to San Francisco and Daly City, is scheduled to become operative next September.

IN ILLINOIS, A TRANSIT GRAB-BAG?

"Chance it for transit" might well be a new motto for mass-transportation supporters in Illinois—because a state lottery would be one part of a transit-aid package going before the state legislature. The lottery would provide about $30 million out of a total $160 million earmarked for transit improvements in the six-county Chicago area. The biggest yield ($100 million) would come from a half-percent out of the 5% sales tax levied in the area (with the tax, already at 5%, dropped to 4½% in the rest of the state and maintained at 5% in the metropolitan counties). A special parking tax and a Chicago-originated subsidy would provide the remaining $30 million. Contrary to railroad hopes, the transit-management agency would apparently be more an umbrella than an authority with authority (RA, May 14, p. 31). In any event, the proposal—though it was supposedly developed with bipartisan support—faces an uncertain future.

ELEVATED PEOPLE MOVER FOR NEW YORK?

A consulting team headed by Kaiser Engineers has recommended construction of a 3.07-mile, double-track, elevated "people mover" loop in the lower Manhattan area of New York City. The loop, which would utilize rubber-tired vehicles, would extend from the southern tip of Manhattan to the Chambers Street/Brooklyn Bridge area. The loop would have 10 stations; it would take 11 minutes to complete the circuit. Total cost of the system would be $185 million to $225 million, in 1972 dollars. The report also recommended construction of underground moving sidewalks within the area served by the loop. This area includes New York's busy financial district. To help ease midtown congestion, the report suggested that 48th and 49th streets be converted for the exclusive use of buses and pedestrians, at a cost of $43 million. Still another recommendation calls for construction of a "continuous capacity vehicle system" between Grand Central Terminal at 42nd street and 48th street. This demonstration project would cost an estimated $8.5 million.

IMPROVEMENTS SET FOR LINDENWOLD LINE

New Jersey formally agreed on May 22 to participate in a $36-million improvement program for the Lindenwold-Philadelphia High Speed Line. The state will provide $10 million, the Federal government $24 million. The remaining $2 million will come from the Delaware River Port Authority, the state of Pennsylvania and the city of Philadelphia. The project will include purchase of 45 new cars at a cost of $18.1 million, construction of a new Woodcrest Station in Cherry Hill, N.J., at a cost of $11.8 million, and construction of new park 'n' ride facilities, as well as expansion of several existing stations, at a cost of $6.1 million. The improvements are expected to provide service for some 10,000 passengers each day, in addition to the approximately 20,000 passengers now using it.

SIGNALS ARE GO FOR AIRPORT ACCESS LINES

The way has now been cleared for a $650-million rail-transit expansion program which will be undertaken by the Port Authority of New York and New Jersey. Approval of enabling legislation by the New York Legislature (following earlier approval by New Jersey) means that the Port Authority can proceed with plans to complete a rail link between Manhattan and JFK Airport, and extend the existing PATH system to Newark Airport. Until the new legislation was passed, the Port Authority was expressly prohibited from engaging in mass transit activities beyond the takeover of the Hudson Tubes (now PATH) ten years ago.

PIKARSKY TAKES OVER AT CTB

At long last, Milton Pikarsky has taken his place on the Chicago Transit Board and been elected chairman to complete the term of the late Michael Cafferty. Pikarsky, a nationally-renowned expert in the urban transportation field, had been commissioner of public works in Chicago since 1964. He was appointed to the CTB post by Mayor Richard J. Daley many weeks ago—but the appointment required the approval of Illinois Gov. Daniel Walker, and that approval was given only recently.

CP RAIL REFURBISHES PASSENGER EQUIPMENT

Much of CP Rail's transcontinental passenger train equipment is undergoing major refurbishing to be completed in time for the peak summer season. Cost of the work, being done at the road's Angus Shops in Montreal, exceeds $900,000. Many of the cars that form "The Canadian" and its sister train that links Montreal with St. John, N.B., are involved. The project covers 19 coaches, 10 Skyline coffee shop cars and five sleeping cars.

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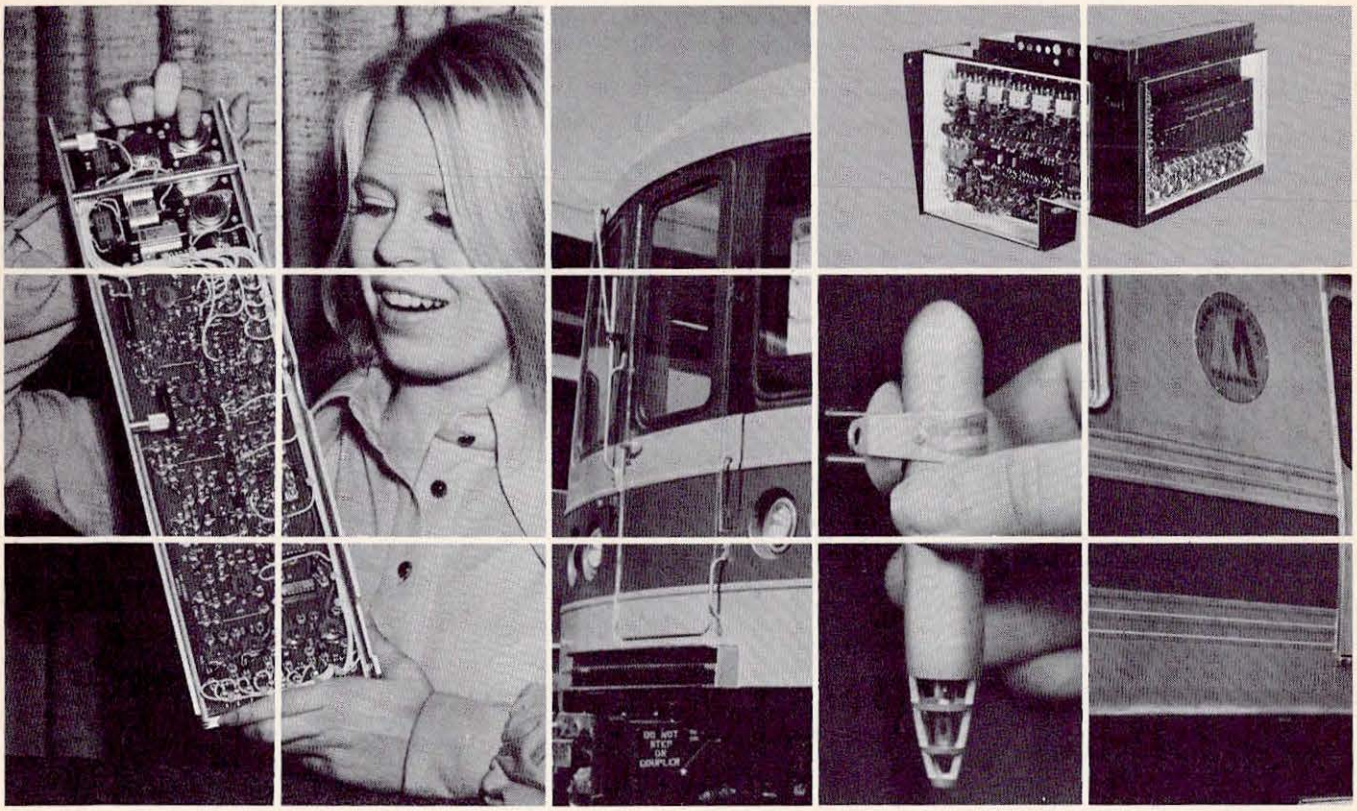

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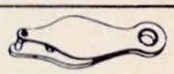

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Viewpoint

Criticism: Will it be raucous or responsible?

On occasion, railroad management just naturally seems to fall into a position of "damned if you do, damned if you don't." Consider a few problem areas out of the recent past and present:

—Management seeks a more stable earnings base, so it diversifies, forms a holding company, builds a conglomerate. Stockholders once complained about the cyclical, undependable nature of railroad income. Now they (and others) charge that management is not only neglecting the railroad but even draining its assets to support other enterprises.

—Management tries to build a board with in-house directors, presumably to make sure corporate direction is based on know-how and experience, and it's criticized for not being responsive to the shareholders and for trying to perpetuate itself through board control. On the other hand, a board loaded with outside directors can find itself dominated by a power-figure who may or may not know the territory. Maybe even worse, for long-run stockholder good, a board could be populated by dozers-in-chairs who awaken long enough to rubber-stamp management decisions, who do little more than show up and collect their fees.

—Management of fortuitously-located railroads may be blessed by substantial holdings of Nature's resources, timber, coal, oil, gas and so forth. If exploitive management goes charging in, conservationists cry "Rape." If conservationist management takes a more methodical approach, shareholders start fretting about all the dollars of potential earnings and dividends that aren't being realized.

Are the critics sometimes right? Certainly. But they're also sometimes wrong. Are corporate managers always as pure as the driven snow (before air pollution), and are their decisions always right on the button? Certainly not. But neither are they the venal, self-serving sharpies or the shortsighted dolts that some critics seem to try to make them out to be.

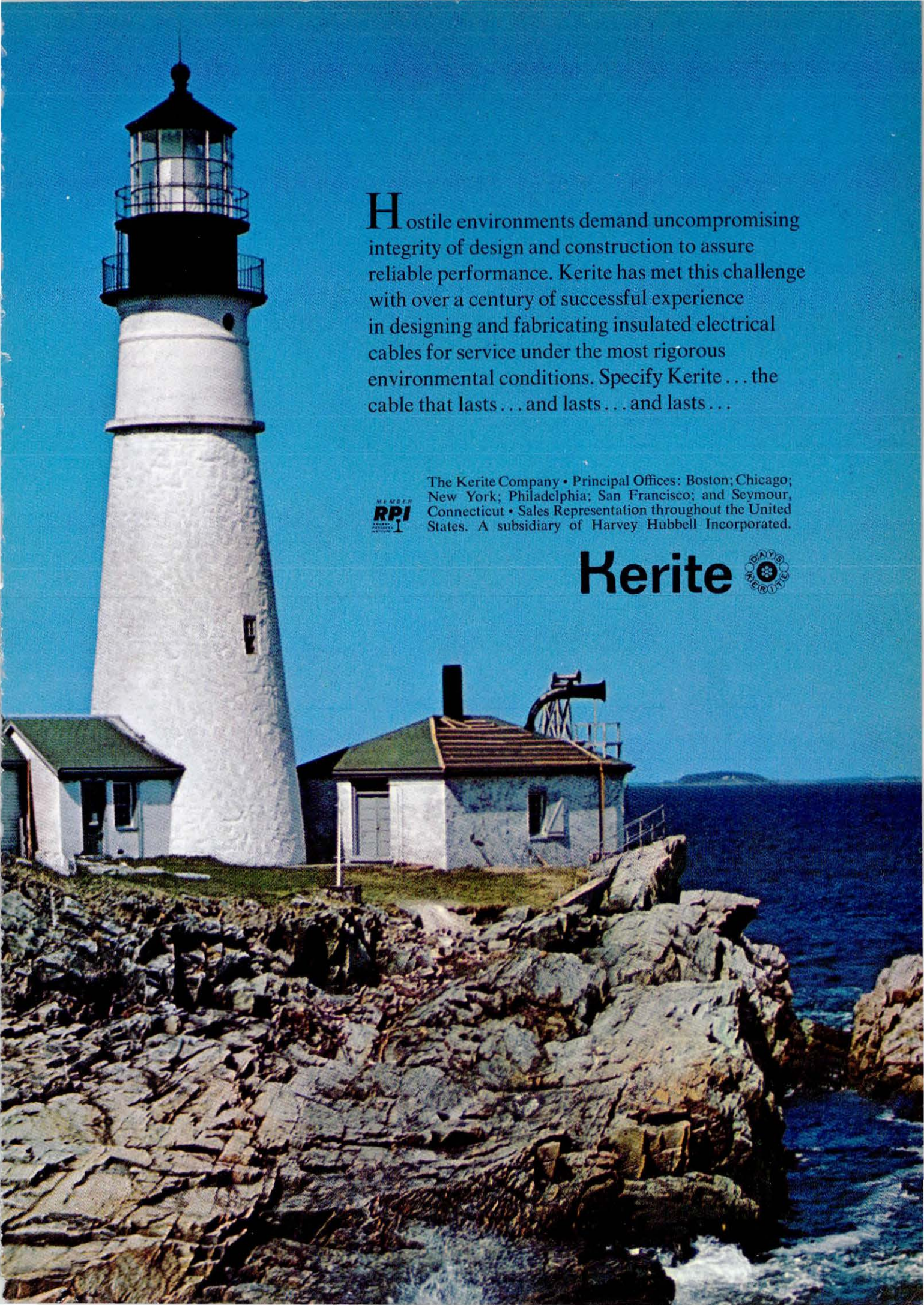
Of course, dissent—honest difference of opinion—is a vital part of any group enterprise. And even if it wasn't Voltaire who once observed that "I do not agree with a word that you say, but I will defend to the death your right to say it," the sentiment expressed is admirable. Perhaps, though, one *could* find reason to wish that the critics had always to meet the same requirements of responsibility as are demanded of the people being criticized.

MANAGEMENT'S EVER-BROADENING ROLE

Of course, too, management's areas of responsibility have been considerably broadened, partly by voluntary action (diversification, for example) and partly from outside action (consumerism, environmentalism and all the other -isms). And predictably, management has not always been equal to its new and growing challenges.

Every once in a while, somebody dredges up that old line to the effect that "the men who run today's railroads could never have built them." Equally true, however, is an observation to the effect that "the men who built yesterday couldn't run today." Or, to put it another way, their running would be running for the border—because if they operated today the way they built then, they'd find a "Welcome" sign on the jailhouse door.

So, what do you do? Hang the critics? Not today. Today, pray for responsible criticism, responsible debate—and hope that it's not too much to ask.



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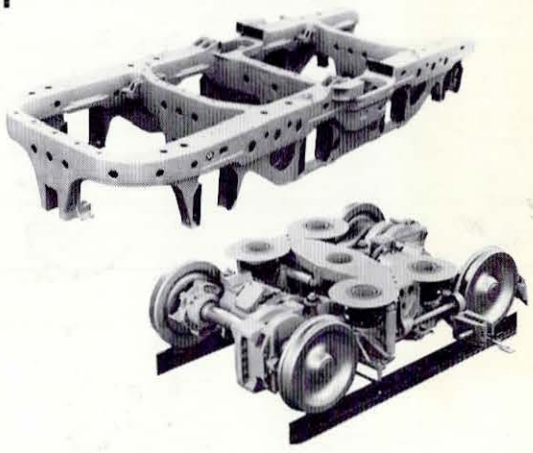

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